

SERVICE MANUAL

Models

RGX2900

RGX3600

RGX4800

GENERATORS

PUB-GS2102
Rev. 05/06



Robin Power Products

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This manual covers only alternator and control unit portion of the generator.

As to the servicing information of engine portion, please refer to the "EX series" service manual.

The specifications and information included in this manual were in effect at the time of printing.

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1. SPECIFICATIONS

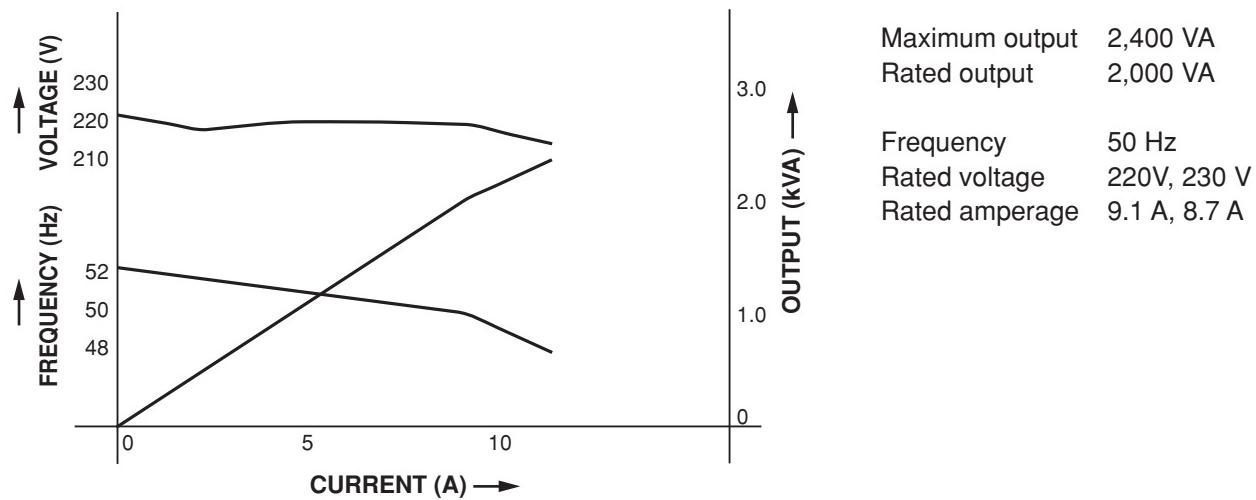
1-1 SPECIFICATIONS

	MODEL	RGX2900	RGX3600	RGX4800
Generator	Type	Brush-less, self-exciting, 2-poles, single phase		
	Voltage regulating system	Condenser type		
	AC Output			
	Rated voltage-Frequency V-Hz	220-50, 240-50, 230-50, 120/240-60		
	Rated output VA (W)	50Hz 60Hz	2000 2400	2400 2900
	Maximum output VA (W)	50Hz 60Hz	2400 2900	3000 3600
	Rated power factor		1.0	
	Safety device type		Fuse-less circuit breaker	
	DC Output			
	Rated voltage V		12	
Engine	Rated current A		8.3	
	Safety device type		Fuse-less circuit breaker	
	Model	EX17D	EX21D	EX27D
	Type	ROBIN, Air-cooled, 4-stroke, OHC		
	Displacement mL	169	211	265
	Fuel	Automotive Unleaded Gasoline		
	Fuel tank capacity L		16.6	
	Rated continuous operation H	50Hz 60Hz	12 10.5	9.5 8.4
	Engine oil capacity L		0.6	1.0
Dimension	Spark plug	BR-6HS (NGK) (Champion; RL86C)		
	Starting system	Recoil starter		
	Length mm	580	605	650
	Width mm	420	450	510
	Height mm	480	500	540
	Dry weight kg	48	54	70

Specifications are subject to change without notice.

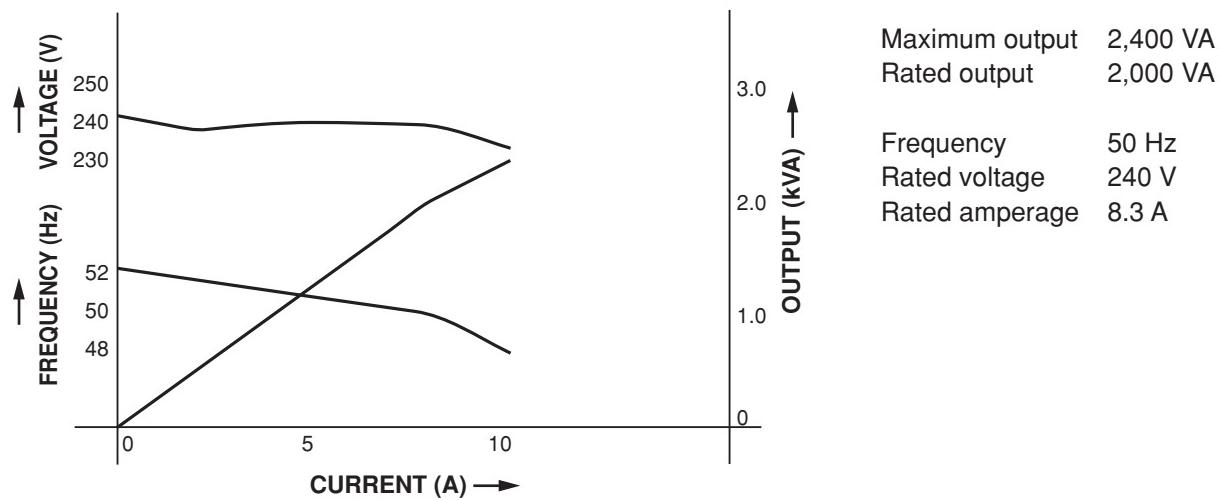
1-2 PERFORMANCE CURVES

RGX2900
(50Hz-220, 230V)



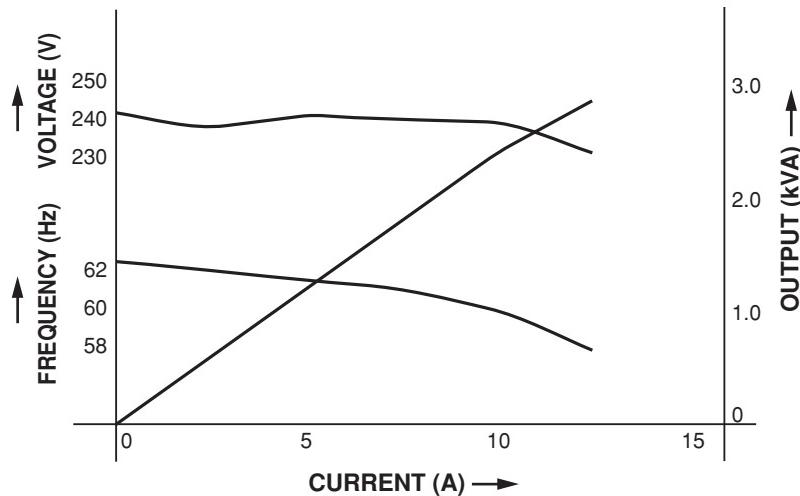
Maximum output	2,400 VA
Rated output	2,000 VA
Frequency	50 Hz
Rated voltage	220V, 230 V
Rated amperage	9.1 A, 8.7 A

(50Hz-240V)



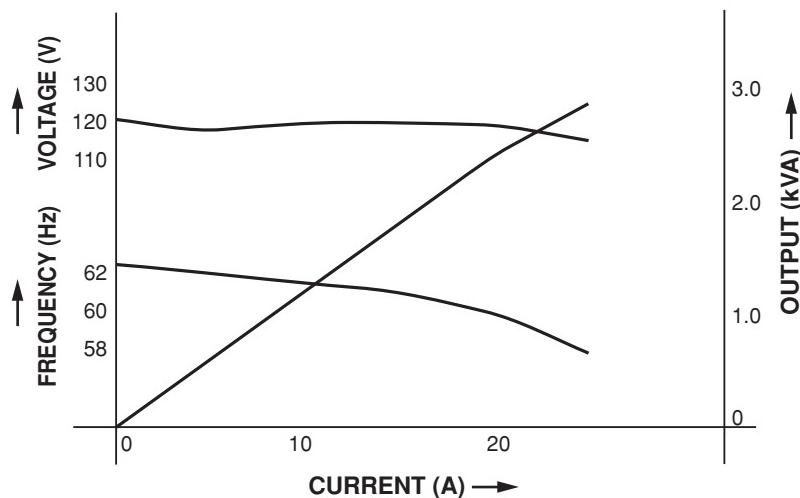
Maximum output	2,400 VA
Rated output	2,000 VA
Frequency	50 Hz
Rated voltage	240 V
Rated amperage	8.3 A

RGX2900
(60Hz-120/240V)
• 60Hz-240V output



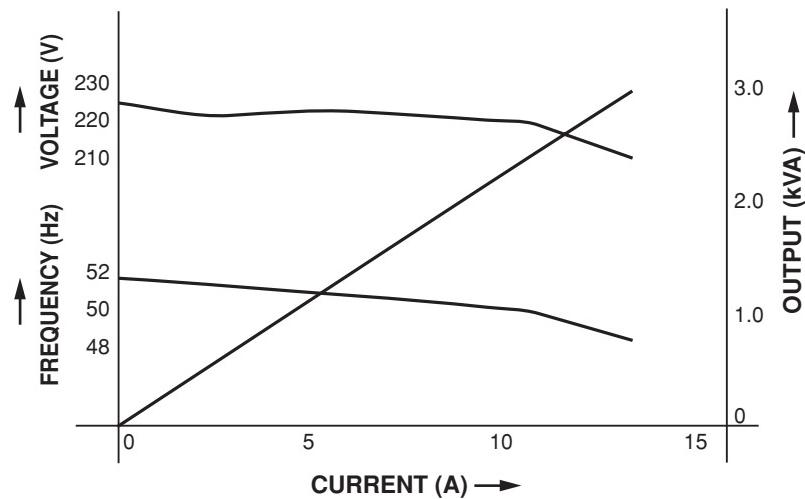
Maximum output 2,900 VA
Rated output 2,400 VA
Frequency 60 Hz
Rated voltage 240 V
Rated amperage 10 A

• 60Hz-120V output



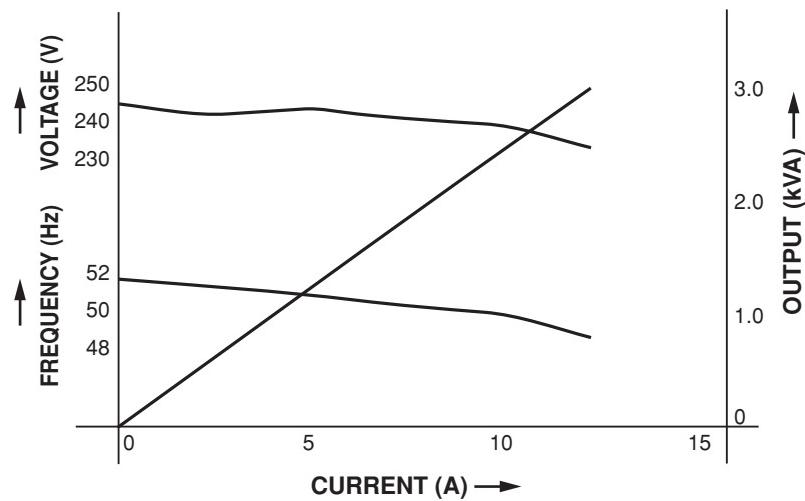
Maximum output 2,900 VA
Rated output 2,400 VA
Frequency 60 Hz
Rated voltage 120 V
Rated amperage 20 A

RGX3600
(50Hz-220, 230V)



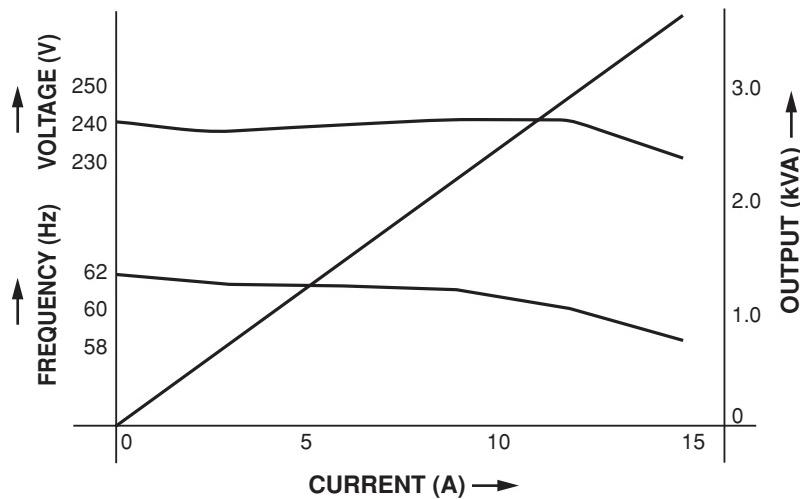
Maximum output	3,000 VA
Rated output	2,400 VA
Frequency	50 Hz
Rated voltage	220V, 230 V
Rated amperage	10.9 A, 10.4 A

(50Hz-240V)



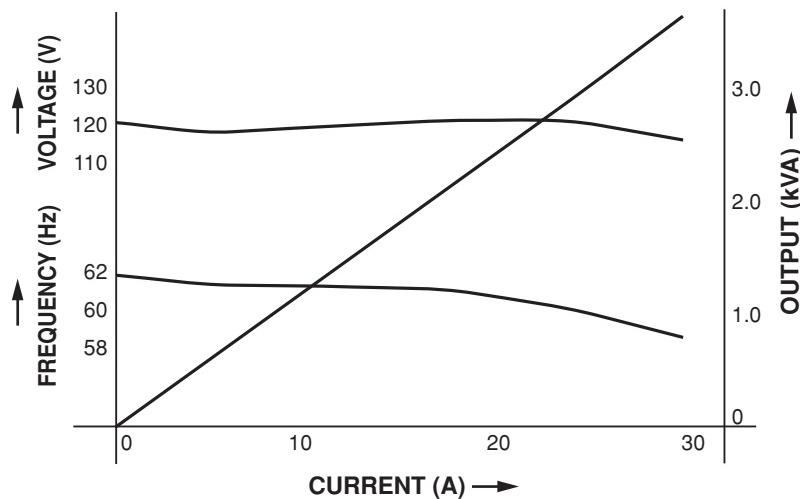
Maximum output	3,000 VA
Rated output	2,400 VA
Frequency	50 Hz
Rated voltage	240 V
Rated amperage	10 A

RGX3600
(60Hz-120/240V)
• 60Hz-240V output



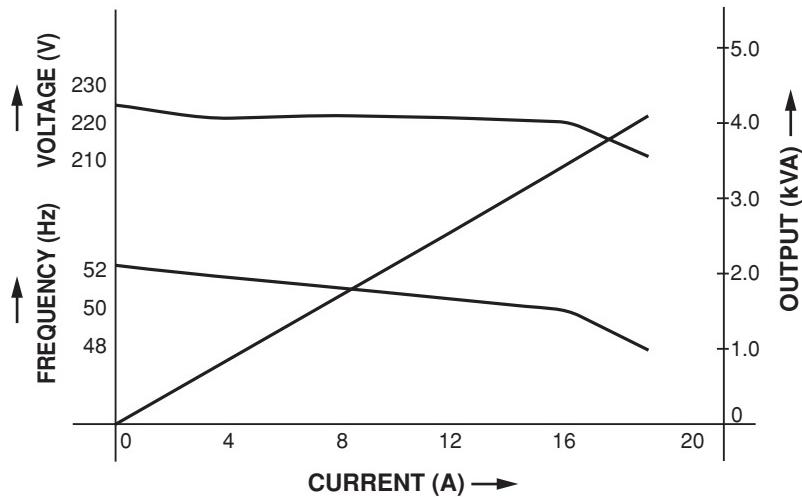
Maximum output	3,600 VA
Rated output	2,900 VA
Frequency	60 Hz
Rated voltage	240 V
Rated amperage	12.1 A

• 60Hz-120V output



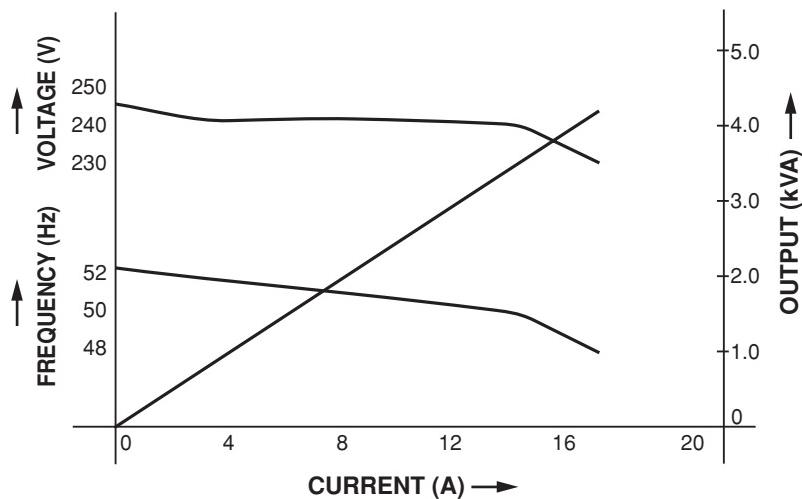
Maximum output	3,600 VA
Rated output	2,900 VA
Frequency	60 Hz
Rated voltage	120 V
Rated amperage	24.2 A

RGX4800
(50Hz-220V,230V)



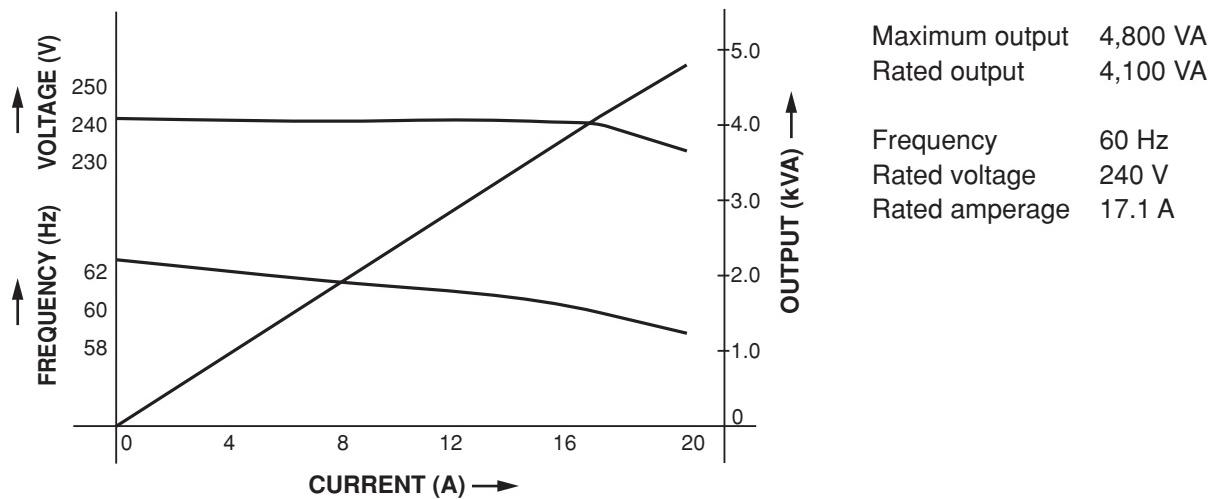
Maximum output	4,100 VA
Rated output	3,500 VA
Frequency	50 Hz
Rated voltage	220V, 230 V
Rated amperage	15.9 A, 15.2 A

(50Hz-240V)

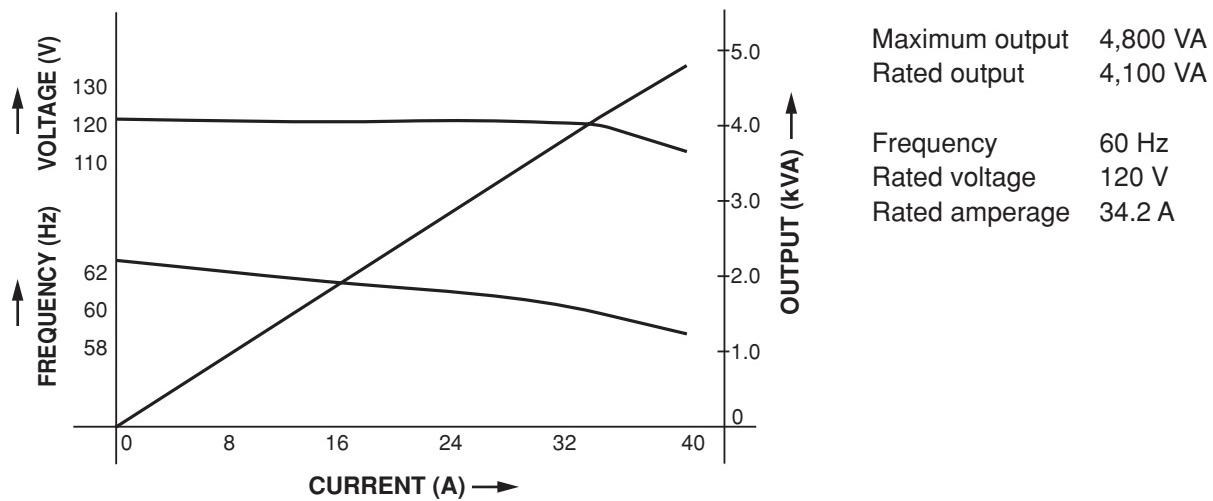


Maximum output	4,100 VA
Rated output	3,500 VA
Frequency	50 Hz
Rated voltage	240 V
Rated amperage	14.6 A

RGX4800
(60Hz-120/240V)
• 60Hz-240V output

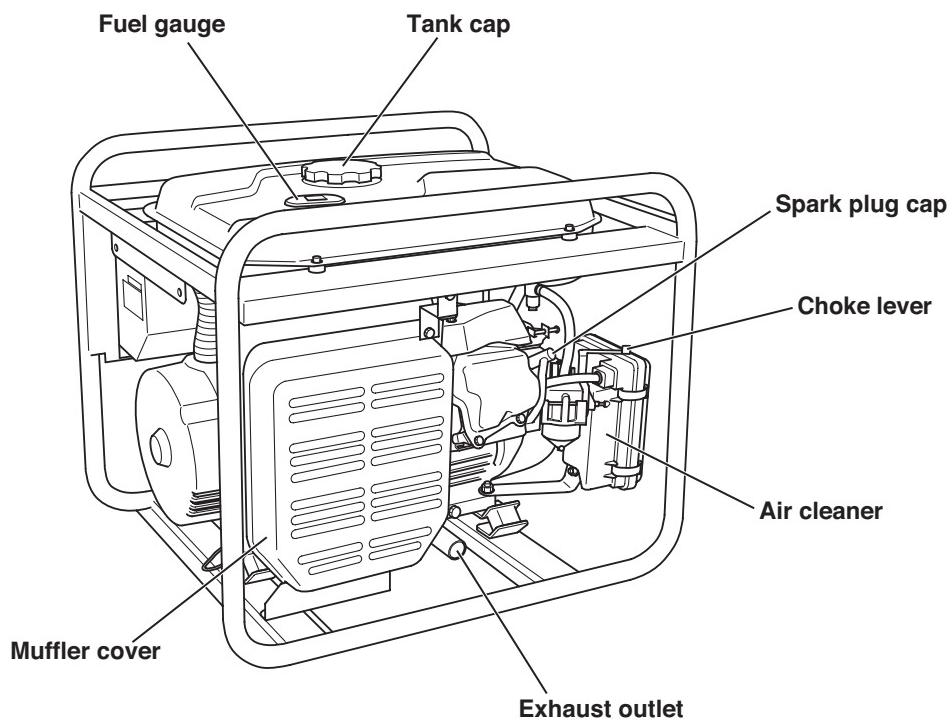
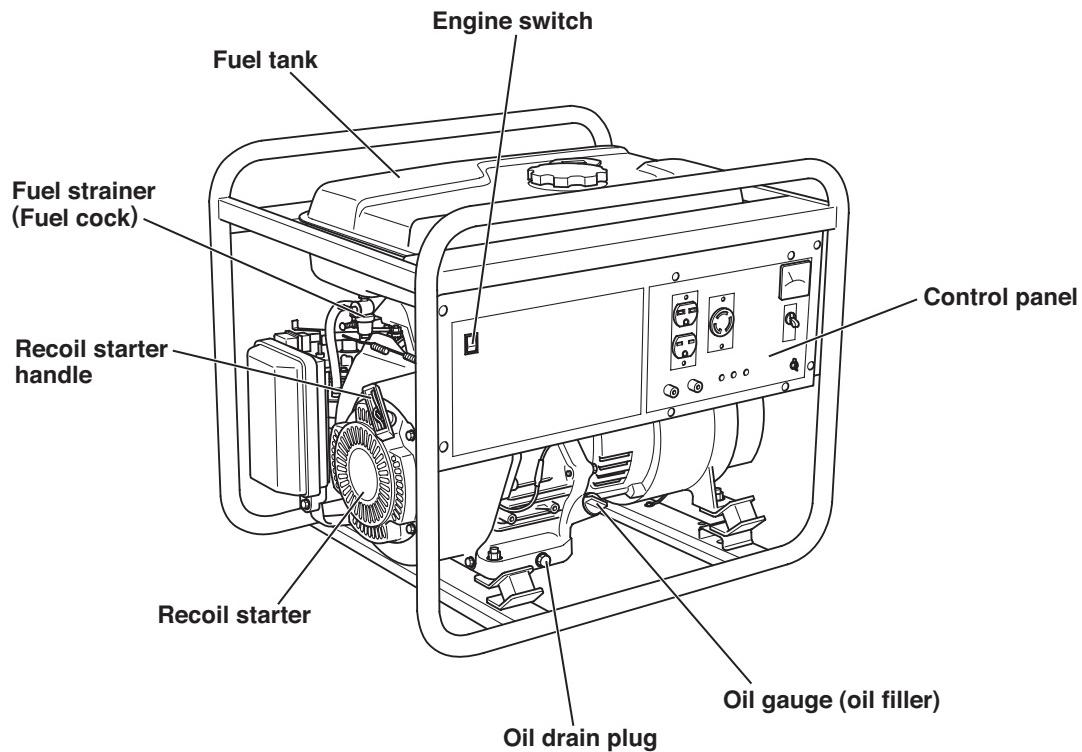


• 60Hz-120V output



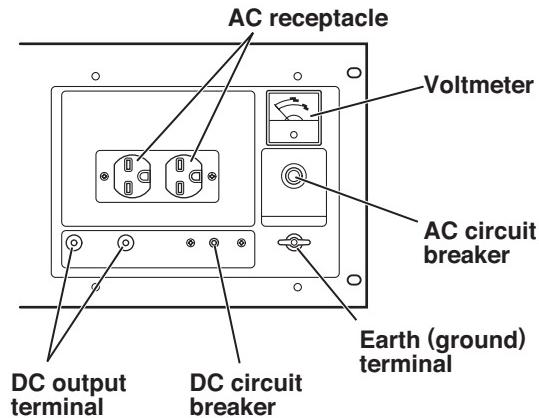
2. GENERAL DESCRIPTION

2-1 EXTERNAL VIEW

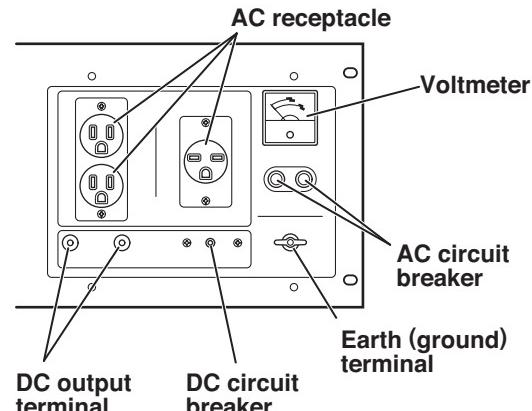


2-2 CONTROL PANEL

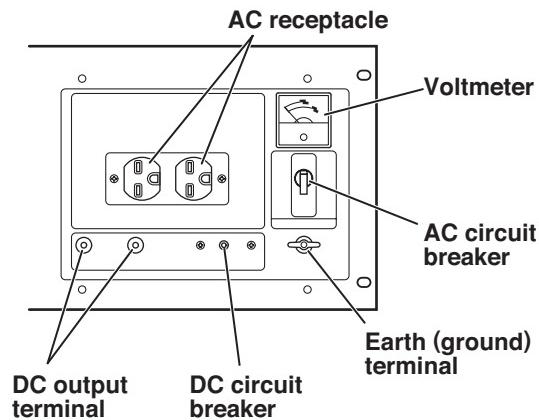
RGX2900
(50Hz-220V, 240V)



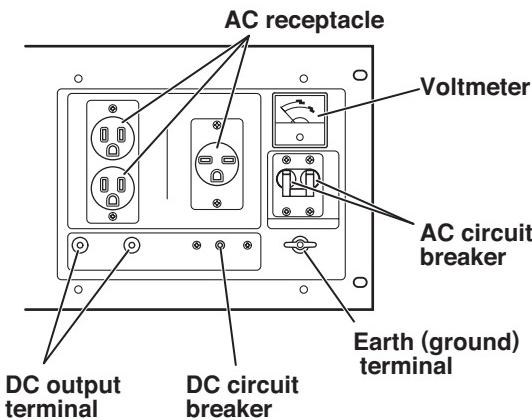
RGX2900
(60Hz-120/240V)



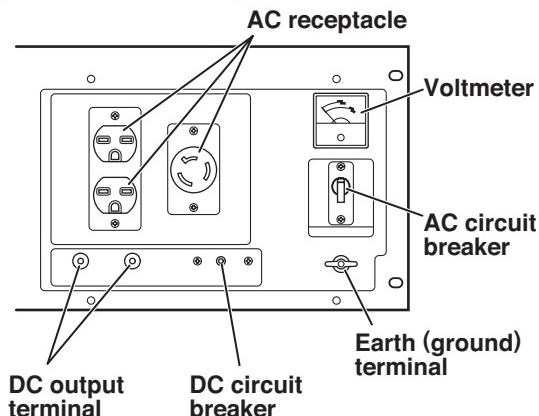
RGX3600
(50Hz-220V, 240V)



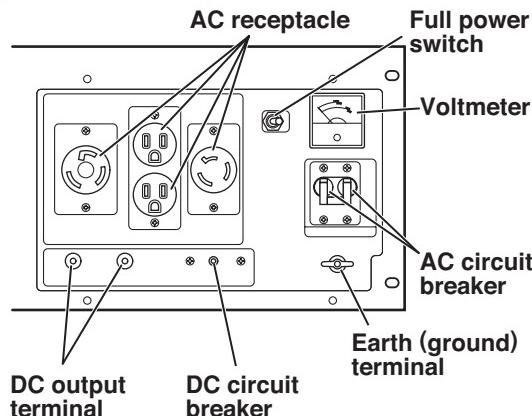
RGX3600
(60Hz-120/240V)



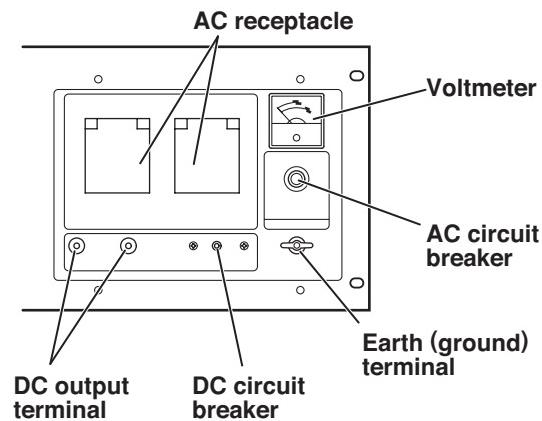
RGX4800
(50Hz-220V, 240V)



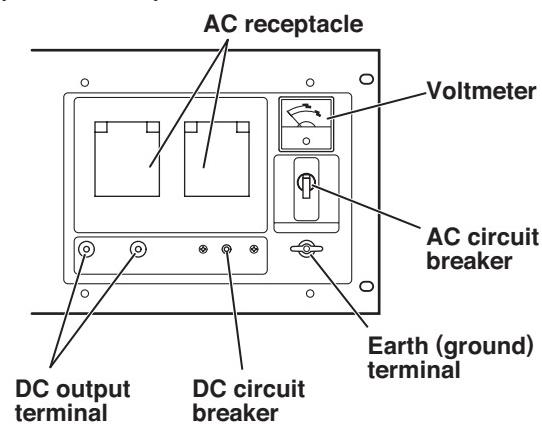
RGX4800
(60Hz-120/240V)



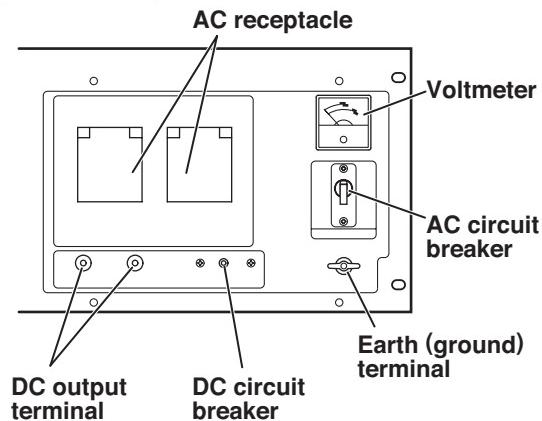
RGX2900
(50Hz-230V)



RGX3600
(50Hz-230V)

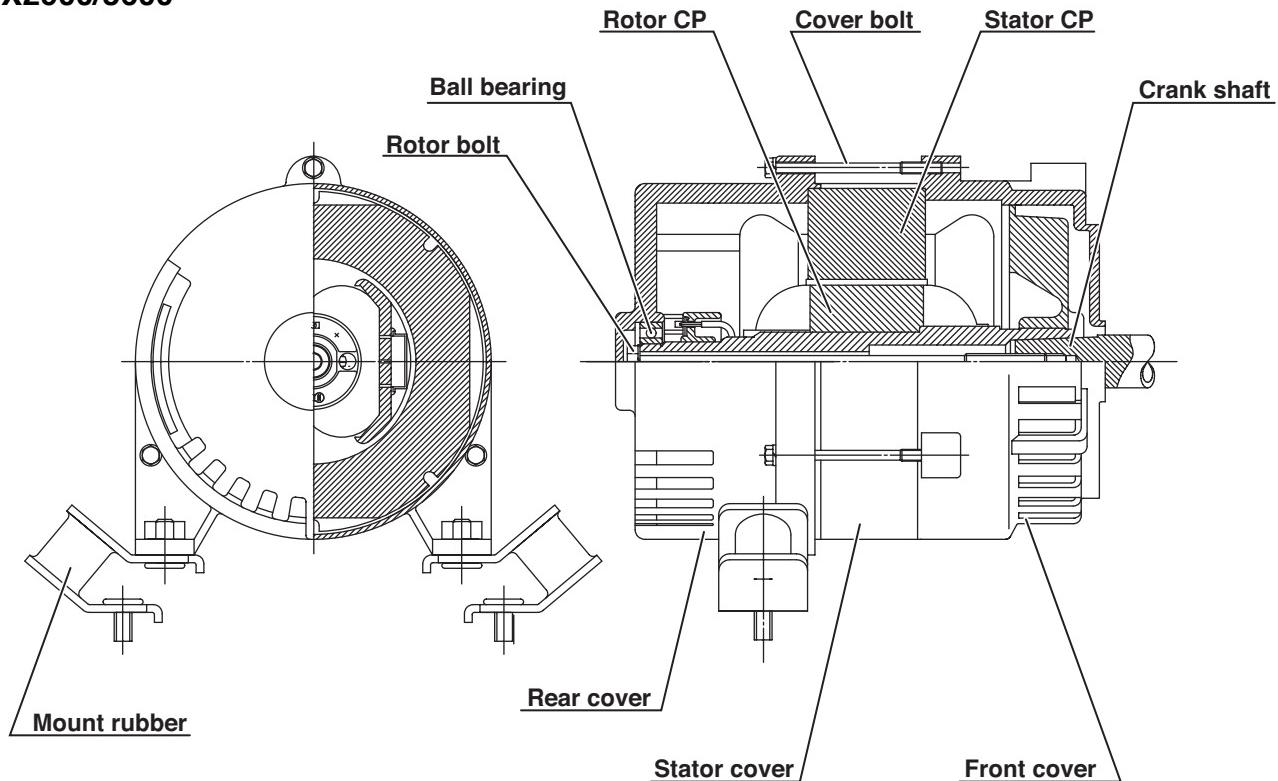


RGX4800
(50Hz-230V)

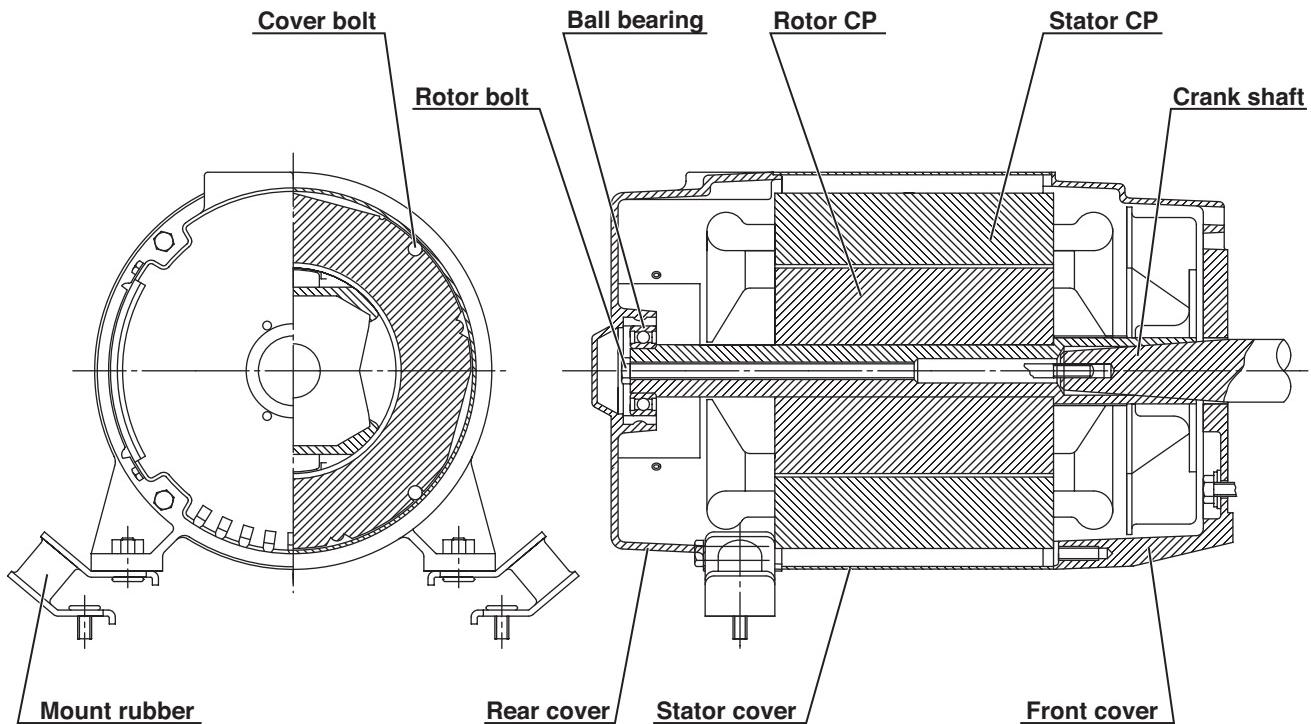


2-3 ALTERNATOR

RGX2900/3600

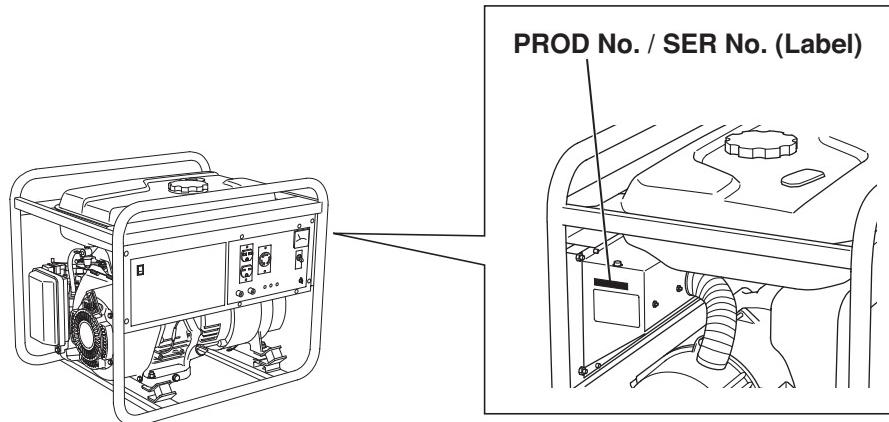


RGX4800



2-4 LOCATION OF SERIAL NUMBER AND PRODUCTION NUMBER

Generator serial number and production number are stamped on the label stuck on the side of fuel tank.



NOTE : When inquiring about your generator or ordering spare parts, always give us the Model, Serial Number and Production Number.

3. RANGE OF APPLICATIONS

Generally, the power rating of an electrical appliance indicates the amount of work that can be done by it. The electric power required for operating an electrical appliance is not always equal to the output wattage of the appliance. The electrical appliances generally have a label showing their rated voltage, frequency, and power consumption (input wattage). The power consumption of an electrical appliance is the power necessary for using it. When using a generator for operating an electrical appliance, the power factor and starting wattage must be taken into consideration.

In order to determine the right size generator, it is necessary to add the total wattage of all appliances to be connected to the unit.

Refer to the followings to calculate the power consumption of each appliance or equipment by its type.

(1) Incandescent lamp, heater, etc. with a power factor of 1.0

Total power consumption must be equal to or less than the rated output of the generator.

Example : A rated 3000W generator can turn thirty 100W incandescent lamps on.

(2) Fluorescent lamps, motor driven tools, light electrical appliances, etc. with a smaller power factor

Select a generator with a rated output equivalent to 1.2 to 2 times of the power consumption of the load. Generally the starting wattage of motor driven tools and light electrical appliances are 1.2 to 3 times larger than their running wattage.

Example : A rated 250 W electric drill requires a 400 W generator to start it.

NOTE 1: If a power factor correction capacitor is not applied to the fluorescent lamp, the more power shall be required to drive the lamps.

NOTE 2: Nominal wattage of the fluorescent lamp generally indicates the output wattage of the lamp. Therefore, if the fluorescent lamp has no special indication as to the power consumption, efficiency should be taken into account as explained in Item (5) on the following page.

(3) Mercury lamps with a smaller power factor

Loads for mercury lamps require 2 to 3 times the indicated wattage during start-up.

Example : A 400 W mercury lamp requires 800 W to 1200 W power source to be turned on. A rated 3000 W generator can power two or three 400 W mercury lamps.

(4) Initially loaded motor driven appliances such as water pumps, compressors, etc.

These appliances require large starting wattage which is 3 to 5 times of running wattage.

Example : A rated 900 W compressor requires a 4500 W generator to drive it.

NOTE 1: Motor-driven appliances require the aforementioned generator output only at the starting. Once their motors are started, the appliances consume about 1.2 to 2 times their rated power consumption so that the excess power generated by the generator can be used for other electrical appliances.

NOTE 2: Motor-driven appliances mentioned in items (3) and (4) vary in their required motor starting power depending on the kind of motor and start-up load. If it is difficult to determine the optimum generator capacity, select a generator with a larger capacity.

(5) Appliances without any indication as to power consumption

Some appliances have no indication as to power consumption; but instead the work load (output) is indicated. In such a case, power consumption is to be worked out according to the numerical formula mentioned below.

$$\frac{(\text{Output of electrical appliance})}{(\text{Efficiency})} = (\text{Power consumption})$$

Efficiencies of some electrical appliances are as follows :

Single-phase motor 0.6 to 0.75 (The smaller the motor, the lower the efficiency)

Fluorescent lamp 0.7 to 0.8

Example 1: A 40W fluorescent lamp means that its luminous output is 40W. Its efficiency is 0.7 and accordingly, power consumption will be $40 \div 0.7 = 57\text{W}$. As explained in **Item (2)**, multiply this power consumption value of 57W by 1.2 to 2 and you will get the figure of the necessary capacity of a generator. In other words, a generator with a rated output of 1000W capacity can light nine to fourteen 40W fluorescent lamps.

Example 2: Generally speaking, a 400W motor means that its work load is 400W. Efficiency of this motor is 0.7 and power consumption will be $400 \div 0.7 = 570\text{W}$. When this motor is used for a motor-driven tool, the capacity of the generator should be multiplied by 1.2 to 3 and 570W as explained in the **Item (3)**. $570\text{ (W)} \times 1.2 \text{ to } 3 = 684\text{ (W)} \text{ to } 1710\text{ (W)}$

Applications	Applicable Wattage (approx. W)					
	RGX2900		RGX3600		RGX4800	
	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz
Incandescent lamp, Heater, etc	2000	2400	2400	2900	3500	4100
Fluorescent lamp, Electric tool, etc	1100	1200	1200	1500	1800	2100
Mercury lamp, etc	800	900	900	1100	1300	1500
Pump, Compressor, etc	500	550	550	650	800	950

NOTES : Wiring between generator and electrical appliances

1. Allowable current of cable

Use a cable with an allowable current that is higher than the rated input current of the load (electrical appliance). If the input current is higher than the allowable current of the cable used, the cable will become excessively heated and deteriorate the insulation, possibly burning it out. The table below shows cables and their allowable currents for your reference.

2. Cable length

If a long cable is used, a voltage drop occurs due to the increased resistance in the conductors decreasing the input voltage to the load (electrical product). As a result, the load can be damaged. The table below shows voltage drops per 30 meters of cable.

Cross sectional mm ²	Allowable Current A	Cable Resistance Ω/100m	Voltage drops per 30 meters of cable					
			5A	10A	15A	20A	25A	30A
1.25	12	1.486	4.5V	8.9V	*	*	*	*
2.0	17	0.952	2.8V	5.7V	8.6V	*	*	*
3.5	23	0.517	1.6V	3.1V	4.7V	6.2V	*	*
5.5	35	0.332	1.0V	2.0V	3.0V	4.0V	5.0V	6.0V

Voltage drop indicates as $V = \frac{1}{100} \times R \times I \times L$

R : Resistance ($\Omega/100m$)
I : Electric current (A)
L : Length (m)

The length of wire (L) indicates round length, which is the length from the generator to the electrical tools and back.

<Example> R : Resistance $1.25\text{mm}^2 = 1.48 \Omega/100\text{m}$
 I : Electric current 10A
 L : Length 30m

The voltage drop of the case described above is

$$V = \frac{1.48\Omega \times 10A \times (30m \times 2)}{100} \doteq 8.9(V)$$

4. MEASURING AND CHECKING PROCEDURES

4-1 MEASURING INSTRUMENTS

(1) VOLTMETER

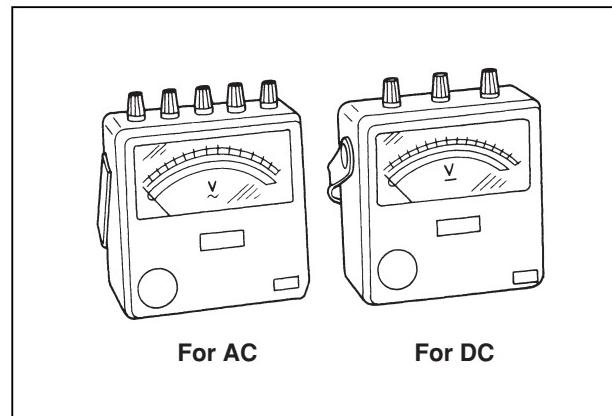
AC voltmeter is necessary.

The approximate AC voltage ranges of the voltmeters to be used for various types of generators are as follows :

0 to 150 V : Type with an output voltage of 110 or 120 V

0 to 300 V : Type with an output voltage of 220, 230 or 240 V

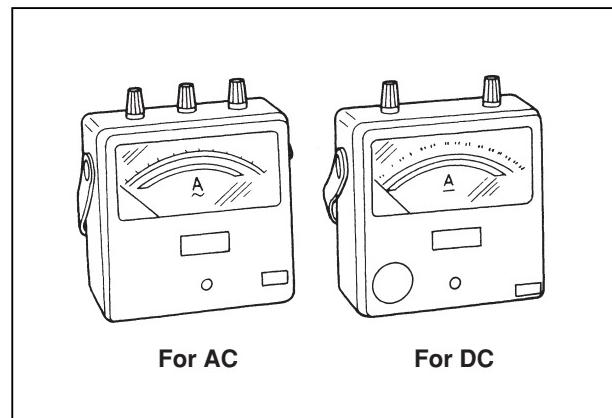
0 to 150 V, 0 to 330 V : Dual voltage type



(2) AMMETER

AC ammeter is necessary.

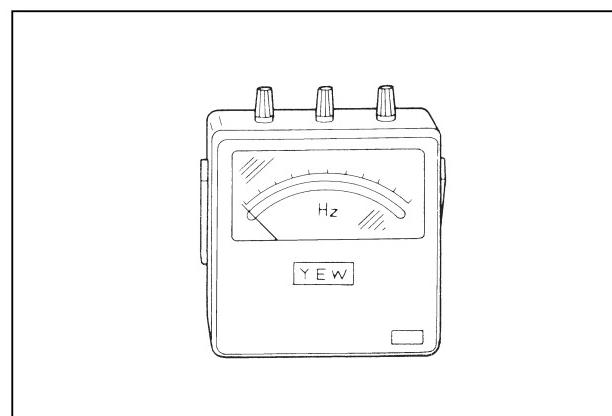
An AC ammeter with a range that can be changed according to the current rating of a given generator is most desirable. (About 10 A, 20 A, 100 A)



(3) FREQUENCY METER

Frequency range : To cover 45 to 65Hz

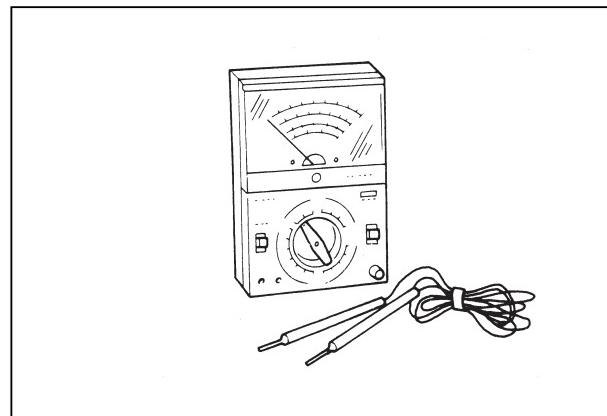
NOTE : Be careful of the frequency meter's input voltage range.



(4) CIRCUIT TESTER

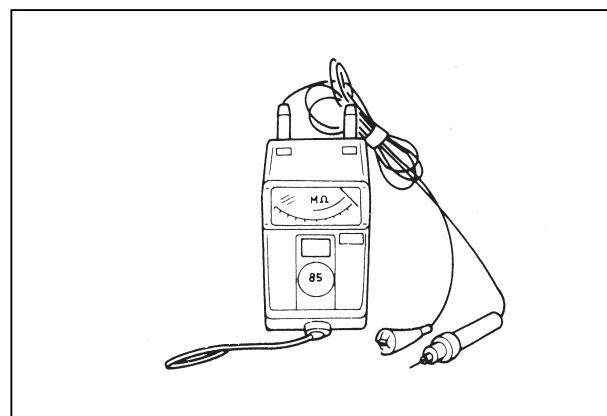
For measuring resistance, etc.

*NOTE : The ordinary circuit tester may cause erroneous readings due to their measuring method.
Use a high-grade, precise circuit tester to check the generator components.*



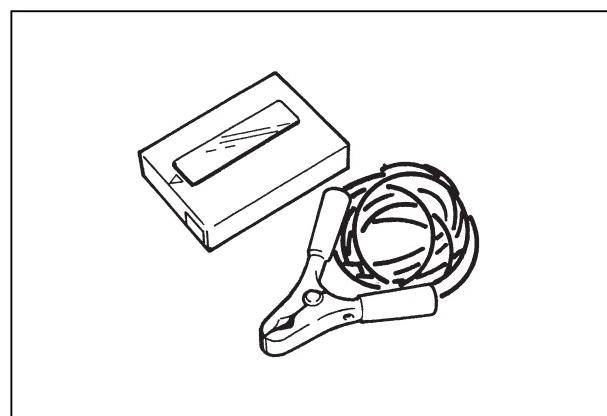
(5) MEAGER TESTER

Used for measuring generator insulation resistance.
Select the one with testing voltage range of 500V.



(6) TACHOMETER

Use the contactless type tacho meter for checking engine speed.

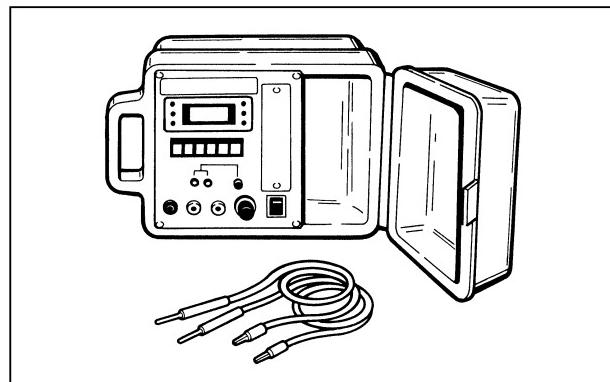


(7) "Dr.Robin" GENERATOR TESTER

The "Dr.Robin" generator tester is exclusively designed for fast, easy diagnosis and repair of Robin generators.

The "Dr.Robin" has the following features :

- 1) Functions of voltmeter, frequency meter, megger tester, capacitance meter and circuit tester are combined in one unit.
- 2) Fast and easy readout by digital indicator.
- 3) Built-in automatic battery checker indicates the time to change batteries.
- 4) Tester and accessories are installed in a handy, sturdy case for easy carrying.



• SPECIFICATIONS

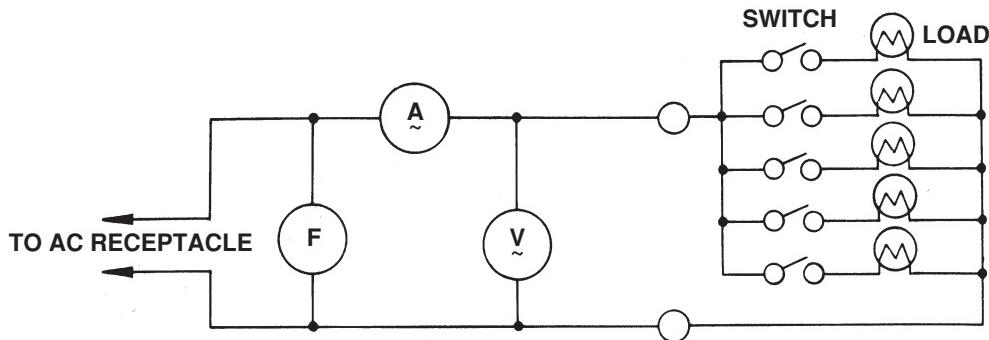
MODEL		Dr.Robin
Part Number		388-47565-08
Measuring Range	Voltage	0 to 500 V AC
	Frequency	25 to 70 Hz
	Resistance	0.1 to 1,999 Ω
	Condenser Capacity	10 to 100 μF
	Insulation Resistance	3MΩ
Circuit Protector		Fuse
Power Source		2 x 6F44P (006P) Dry Cell Battery
Accessories		Test leads with needle probes ... 1 set Test leads with jack plugs ... 1 set
Dimensions (L x W x H)		285 mm x 200 mm x 110 mm
Weight		1.6 kg

The "Dr.Robin" generator tester can be ordered from Robin generator distributors by the following part number.

Dr.Robin Part Number : 388-47565-08

If you do not have a "Dr.Robin" generator tester, use the instruments described in the following section for checking generator parts.

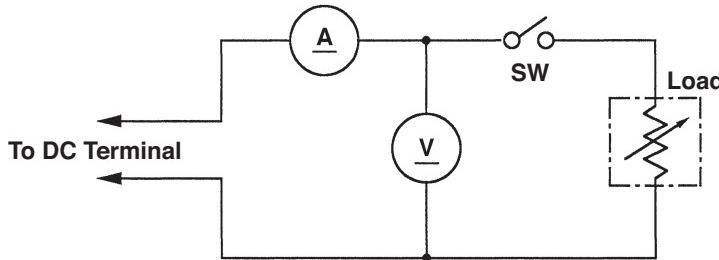
4-2 AC OUTPUT MEASURING



Use a circuit above for measuring AC output. A hot plate or lamp with a power factor of 1.0 may be used as a load. Adjust the load and rpm, and check that the voltage range is as specified in the following table at the rated amperage and rated rpm.

Model	Specification			Voltage range
	50Hz-220V,230V	50Hz-240V	60Hz-120/240V	
RGX2900	207-238		226-259	
RGX3600		226-259	113-130	
RGX4800				

4-3 DC OUTPUT MEASURING



Measurement of DC output is executed with the switch turned ON while the current is regulated at 8.3A by adjusting the load to the generator. If the voltage is within the range from 6V to 14V, the voltage output is normal.

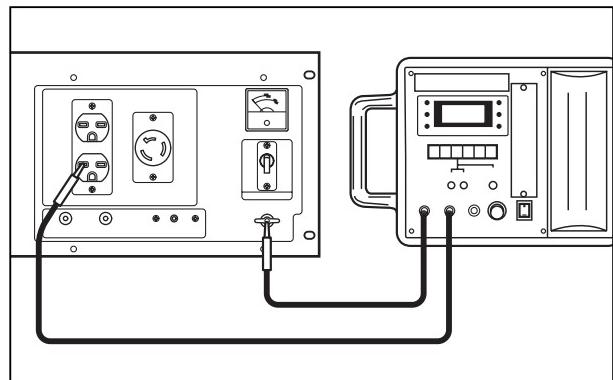
*NOTE : If a battery is connected as a load to the generator, the DC output voltage will increase by approximately 1 to 2 V.
Therefore, carefully observe the electrolyte level and do not overcharge the battery.*

4-4 MEASURING INSULATION RESISTANCE

Use a "Dr. Robin" generator tester in megger tester mode or use a megger tester to check the insulation resistance. Connect a megger tester to one of receptacle output terminals and the ground terminal, then measure the insulation resistance. An insulation resistance of 1 megohm or more is normal. (The original insulation resistance at the time of shipment from the factory is 10 megohm or more.) If it is less than 1 megohm, disassemble the generator and measure the insulation resistance of the stator, rotor and control panel individually.

Any part where the insulation resistance is less than $1M\Omega$ has faulty insulation, and may cause electric leakage and electric shock.

Replace the faulty part.



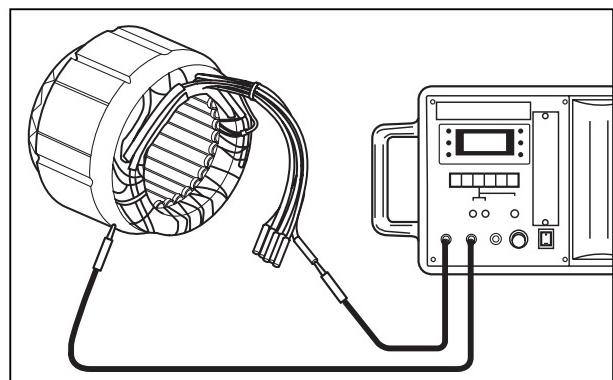
● STATOR

Measure insulation resistance between each terminal from the stator and the stator core.

Measured insulation resistance of 1M ohm or more is normal.

If it is less than 1M ohm, leakage current and electric shock might occur due to faulty insulation.

Replace with new one.



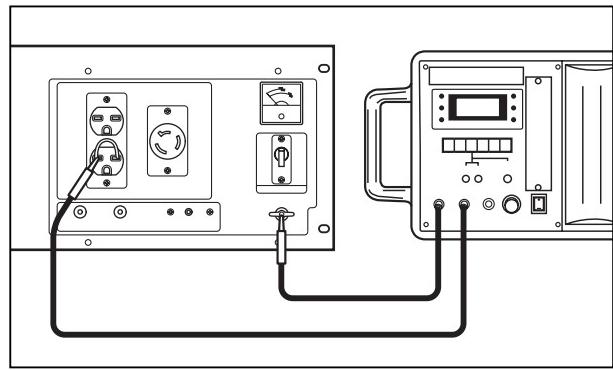
● CONTROL PANEL

With AC circuit breaker turned on, measure insulation resistance between each portion of electrical parts and earth (grounding) terminal or control panel itself.

Measured insulation resistance of 1M ohm or more is normal.

If it is less than 1M ohm, leakage current and electric shock might occur due to faulty insulation.

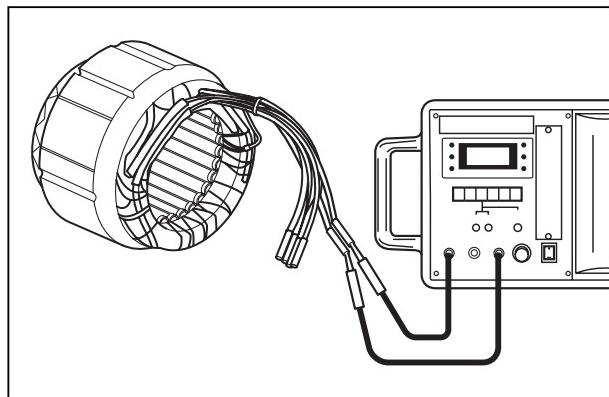
Replace with new one.



4-5 CHECKING FUNCTIONAL MEMBERS

(1) STATOR

Disengage connectors on the wires from stator and check the resistance between the wires using a circuit tester referring to the table below.



Coils (Wire color)	Coil resistance (Ω)								
	RGX2900			RGX3600			RGX4800		
	50Hz-220V 50Hz-230V	50Hz-240V	60Hz-120/240V	50Hz-220V 50Hz-230V	50Hz-240V	60Hz-120/240V	50Hz-220V 50Hz-230V	50Hz-240V	60Hz-120/240V
AC coil 1 (Black - Blue)	0.8	0.9	0.6	0.6	0.7	0.4	0.4	0.4	0.3
AC coil 2 (Red - White)	0.8	0.9	0.6	0.6	0.7	0.4	0.4	0.4	0.3
Condenser coil (Yellow - Yellow)	2.2	2.2	1.7	1.3	1.3	1.0	0.9	0.9	0.6
DC coil (Brown - Brown)	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1

NOTE : If the circuit tester is not sufficiently accurate, it may not show the values given and may give erroneous readings.

Erroneous readings will also occur when there is a wide variation of resistance among coil windings or when measurement is performed at ambient temperature different from 20°C (68°F).

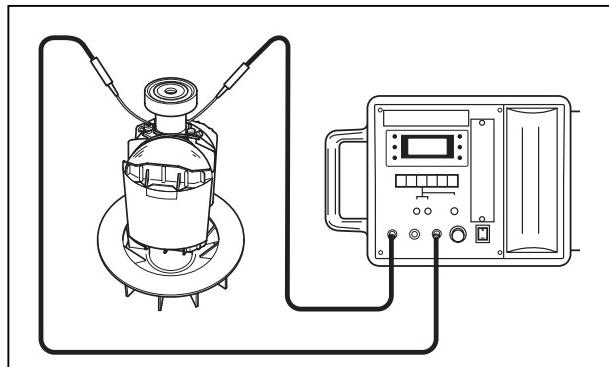
(2) ROTOR

Measure resistance between the field coil.

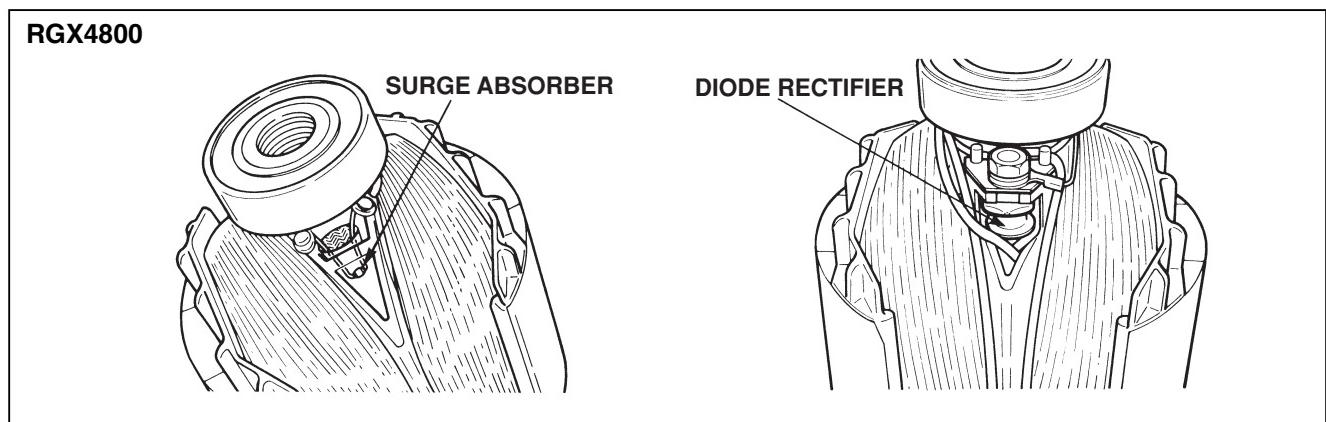
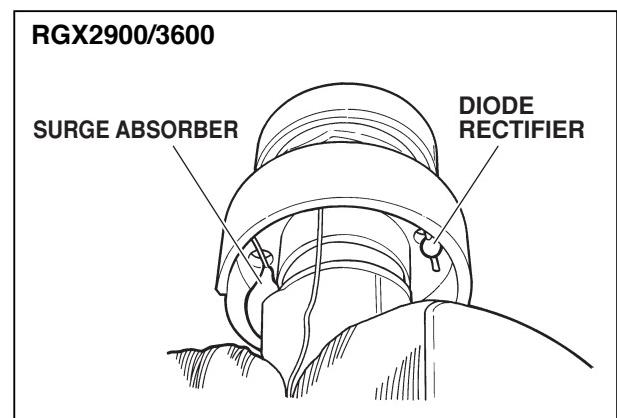
	Coil resistance (Ω)		
	RGX2900	RGX3600	RGX4800
Field coil	1.8	1.6	1.6

NOTE1 : When measuring the field coil resistance, be sure to disconnect the soldering connection and take out diode rectifier and surge absorber.

NOTE2 : When measuring, tolerance should be considered because of the tester inaccuracy, winding number variation, ambient temperature etc.



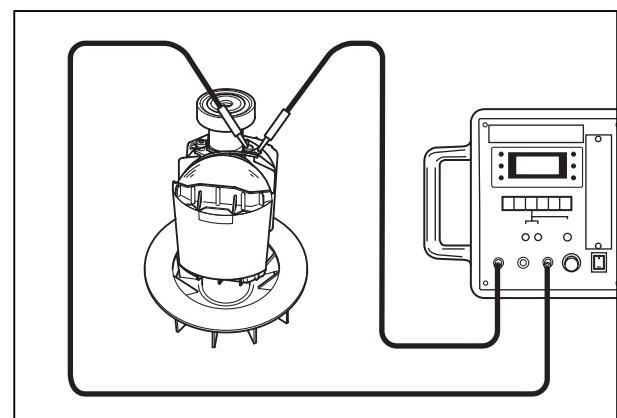
The diode rectifier and surge absorber are located as shown in the following illustrations.



(3) SURGE ABSORBER

Measure the surge absorber resistance.

Resistance (Ω)	$\infty \Omega$
-------------------------	-----------------

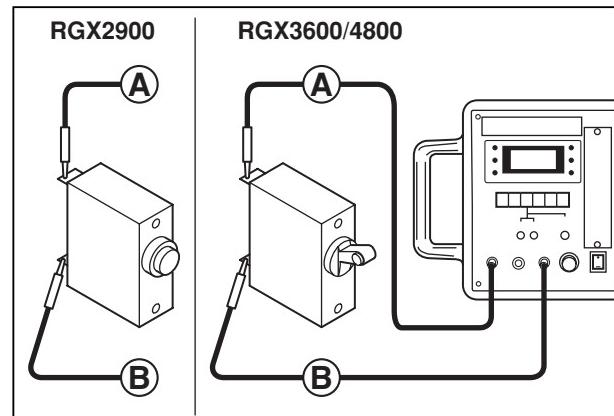


(4) AC CIRCUIT BREAKER

Check continuity between each of two terminals at the rear of the AC circuit breaker while it is mounted on the control panel.

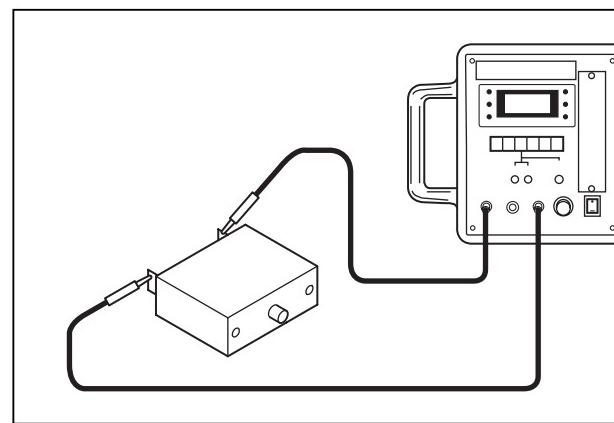
AC circuit breaker

OFF : No continuity
ON : Continuity



(5) DC CIRCUIT BREAKER

Make sure that there is continuity between the two terminals of DC circuit breaker when its push button is pressed.



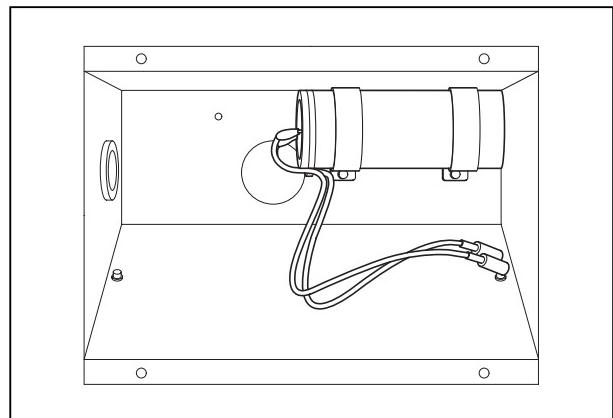
(6) CONDENSER

Use "Dr. ROBIN" in capacitance mode to check the capacity of condenser.

NOTE: Be sure to discharge by shorting condenser leads each other before checking the capacitance, or the accurate reading cannot be obtained.

If such instrument is unavailable, the condenser can be checked by replacing with new one.

If the generator performs good with new condenser, the cause of trouble is defect in original condenser.



MODEL	RGX2900	RGX3600	RGX4800
CAPACITY(μ F)	24	37	20 and 30

(8) AC RECEPTACLES

Make sure that no live part wire or plastic part is burnt out.

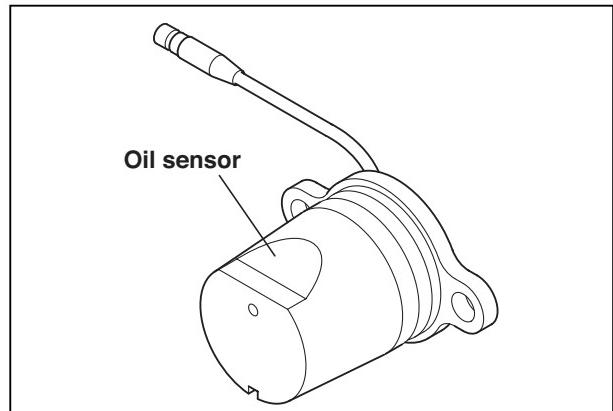
(9) FLOAT TYPE OIL SENSOR

Check the oil sensor when it is installed on the engine.

Check that sufficient engine oil is filled in the crankcase.

Check that there is continuity between the lead wire of oil sensor and the ground (engine crankcase) when the oil level is above the minimum level mark of oil gauge.

Check that there is no continuity as above when the oil level is below the minimum level mark of oil gauge.



5. DISASSEMBLY AND ASSEMBLY

5-1 PREPARATION AND PRECAUTIONS

- (1) Be sure to memorize the location of individual parts when disassembling the generator so that the generator can be reassembled correctly. Tag the disassembled part with the necessary information to facilitate easier and smoother reassembly.
- (2) For more convenience, divide the parts into several groups and store them in boxes.
- (3) To prevent bolts and nuts from being misplaced or installed incorrectly, replace them temporarily to their original position.
- (4) Handle disassembled parts with care; clean them before reassembly using a neutral cleaning fluid.
- (5) Remove the battery before disassembling the generator. (Electric start models)
- (6) Use all disassembly/assembly tools properly, and use the proper tool for each specific job.
- (7) Be sure to attach the foam rubber linings inside the covers on their original position when reassembling the generator. When deformation or damage or falling-off of foam rubber lining is found, replace it with new part. Failure to do so will result in poor performance and durability of the generator.
- (8) Bind the wires and fuel pipes using wire bands as they have been done in original configuration.

NOTE : As to detailed information for servicing procedures on engine portion, please refer to Robin engine service manual for "EX series".

NOTE : Illustrations adopted for the following procedures are ones for RGX4800 model.

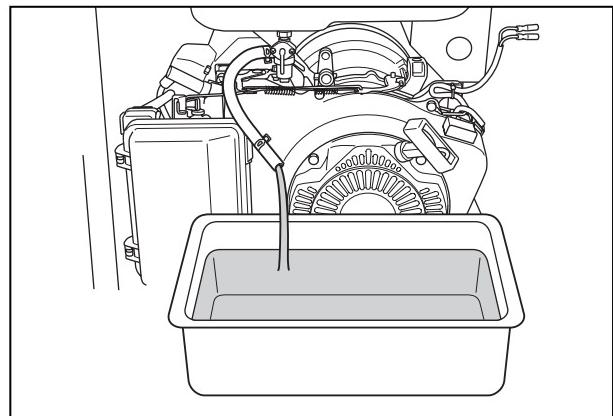
Also illustrations for RGX2900/3600 are adopted as necessary.

5-2 DISASSEMBLY PROCEDURES

5-2-1 Fuel Draining

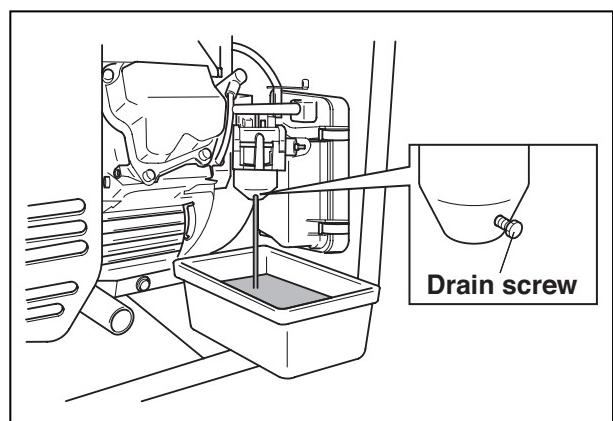
- (1) Make sure fuel strainer cock is closed.
Disconnect fuel pipe from carburetor.
Turn fuel cock lever to the OPEN position, and the drain fuel from fuel tank.

Tool : Pliers

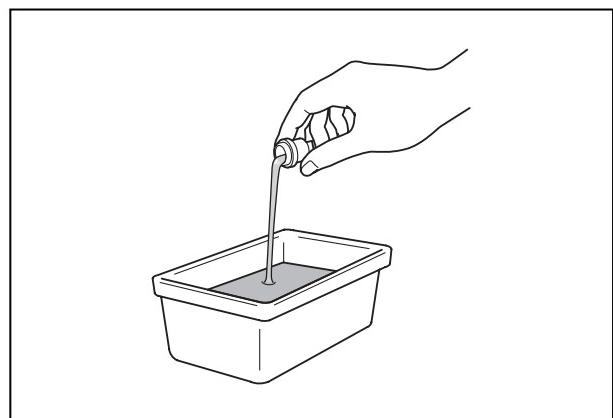


- (2) Remove drain screw from carburetor, and drain fuel from carburetor.
After draining, install drain screw in position.

Tool : Socket wrench (8 mm)



- (3) Remove strainer and drain fuel from strainer cap.
After draining, install strainer in position.



5-2-2 Fuel Tank

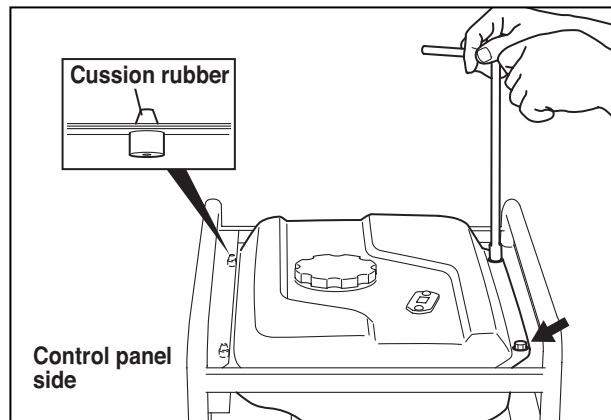
Remove bolts and take out fuel tank.

Fastener : M6 -12 mm Flange reamer bolts (2 pcs)

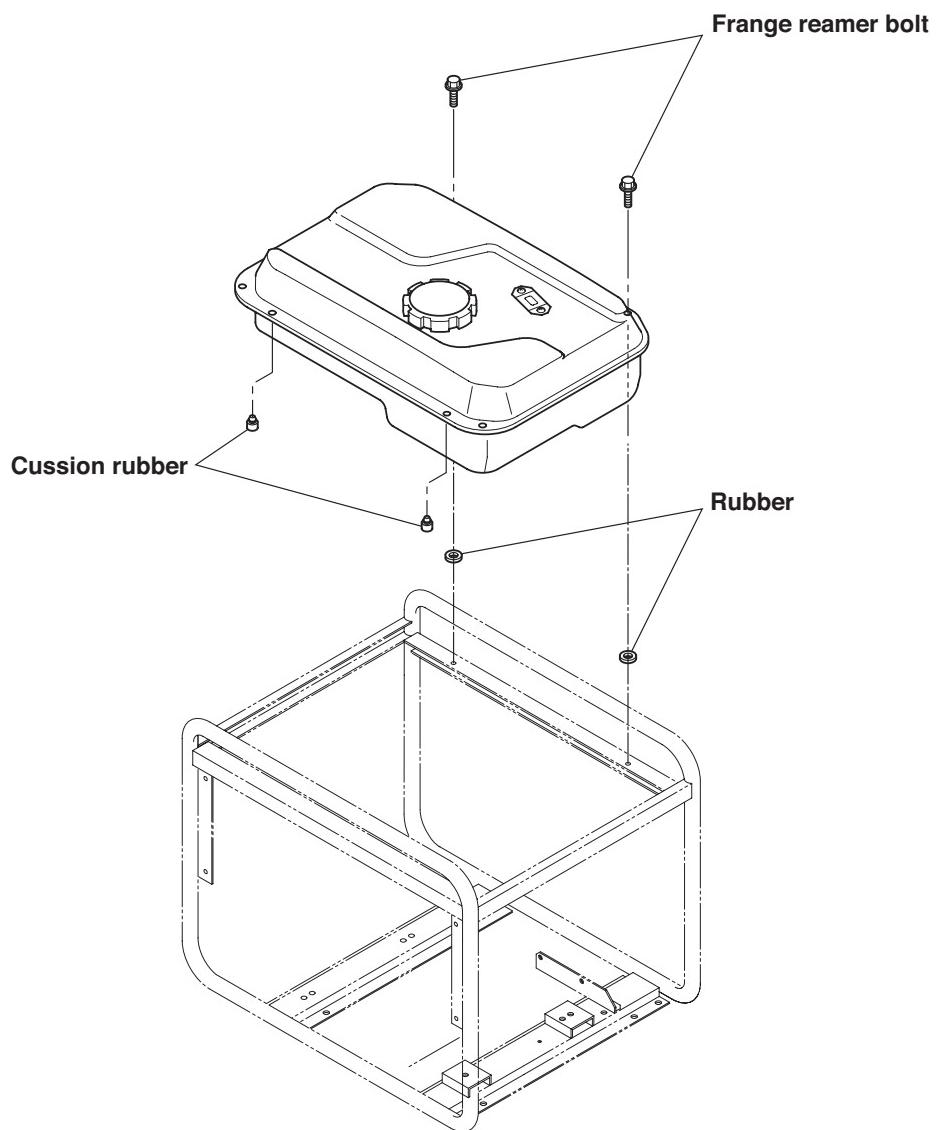
Tool : Box wrench (10 mm)

CAUTION : Before removing fuel tank, make sure to drain fuel from fuel tank and pipings.

NOTE : Don't forget to keep rubbers (2 pcs) commonly fixed with bolts.



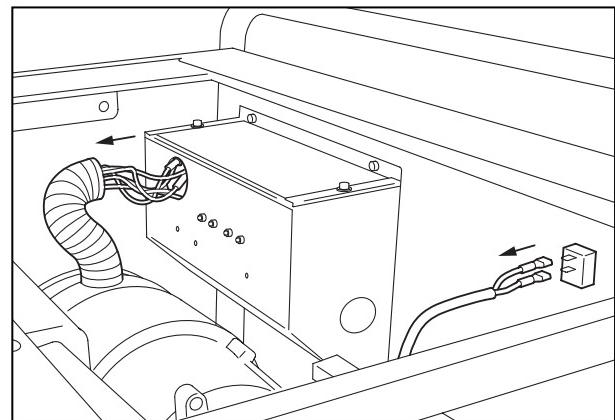
Fuel tank



5-2-3 Electric Connectors

Remove bushing from control panel on back side, pull out wiring harness connectors, and then disconnect electric wirings.

Disconnect electric wirings from engine switch terminals.

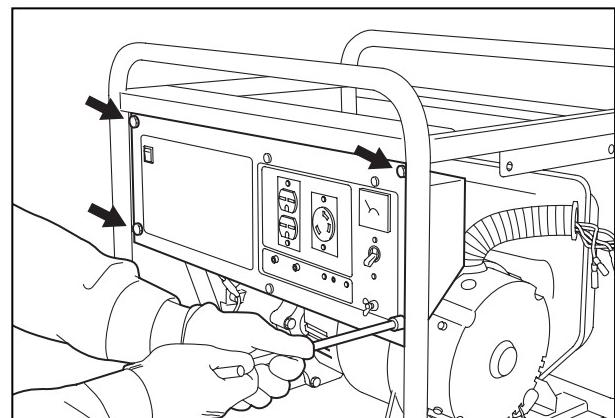


5-2-4 Control Panel

Remove screws and take out control panel from frame.

Fastener : M6 - 12 mm Screws (4 pcs)

Tool : Box wrench (10 mm)

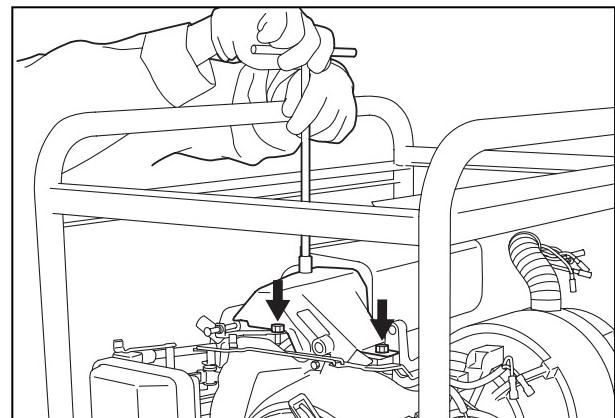


5-2-5 Muffler

(1) Remove screws and take out cover from engine.

Fastener : M6 - 12 mm Flange bolts (3 pcs)

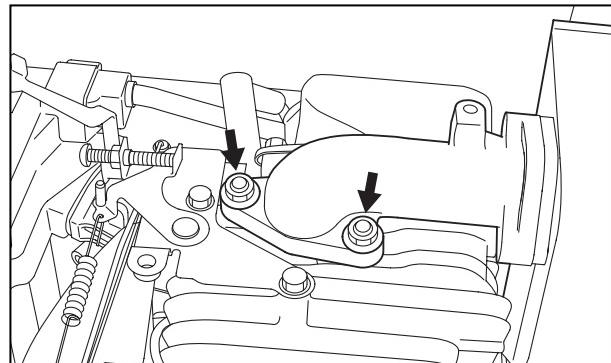
Tool : Box wrench (10 mm)



(2) Remove nuts and take out exhaust pipe.

Fastener : M8 Flange nuts (2 pcs)

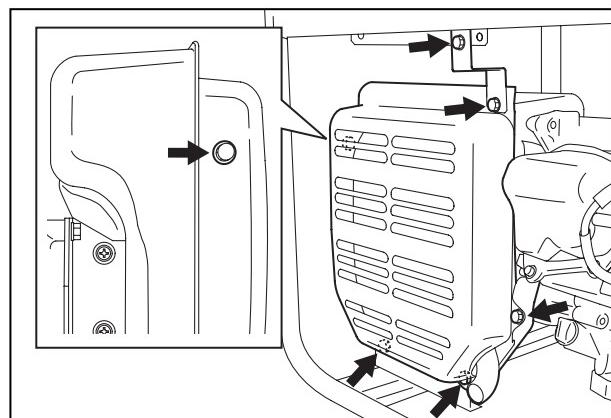
Tool : Box wrench (12 mm)



(3) Remove muffler and cover.

Fastener : M8 - 10 mm Flange bolts (6 pcs)

Tool : Box wrench (12 mm)



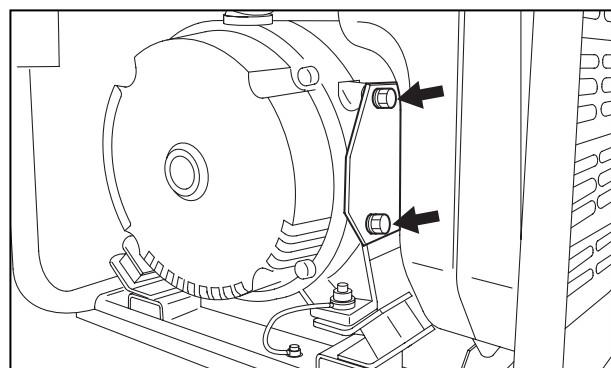
(4) Remove muffler bracket commonly fixed with alternator.

Fastener : M8 - 20 mm Bolt & washers (2 pcs-RGX 4800)

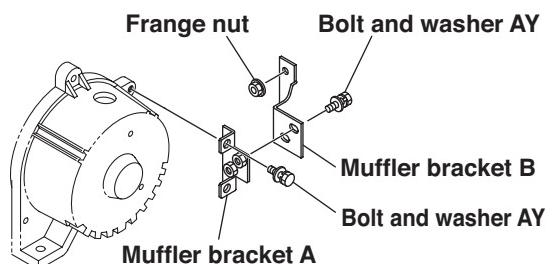
M8 Flange nuts (2 pcs)

M8 - 20 mm Bolt & washers (4 pcs-RGX 2900/3600)

Tool : Socket wrench (12 mm)



RGX2900/3600

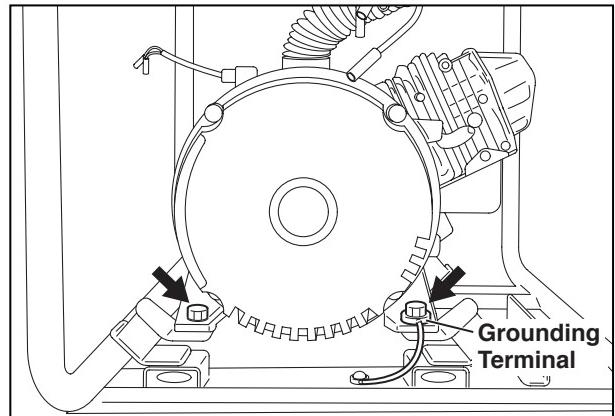


5-2-6 Rear Cover Arms and Grounding Terminal

Remove nuts fixing rear cover onto mounting rubbers.

Fastener : M8 Flange nuts (2 pcs)

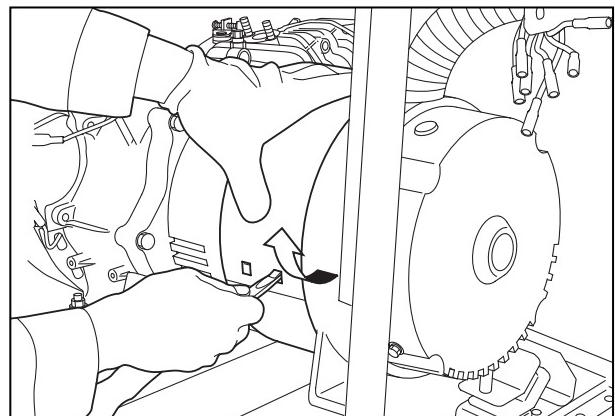
Tool : Box wrench (12 mm)



5-2-7 Stator Cover

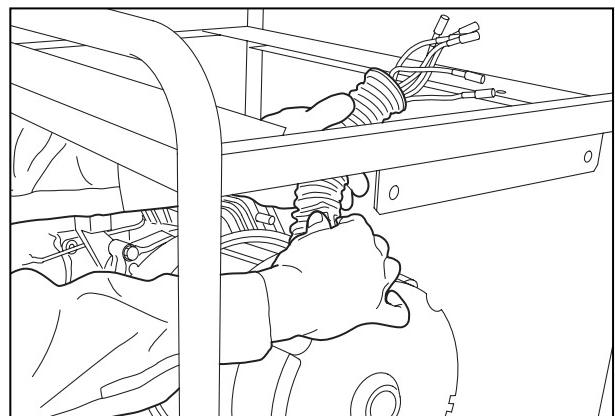
Take out stator cover with crows (2 pcs) raised up by using screw driver.

Tool : Screwdriver



5-2-8 Bushing

Take out bushing from rear cover, pinching with hand.



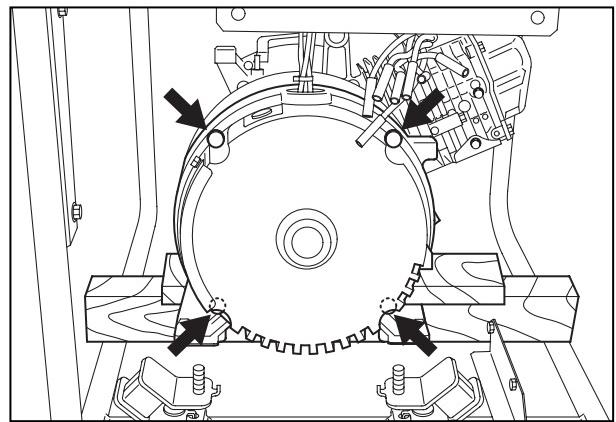
5-2-9 Rear Cover

- (1) Remove stator bolts (RGX4800) or cover bolts (RGX2900/3600).

Fastener : M6 - 150 mm Stator bolts (4 pcs - RGX4800)
M6 -130 mm Cover bolts (3 pcs - RGX3600)
M6 -110 mm Cover bolts (3 pcs - RGX2900)

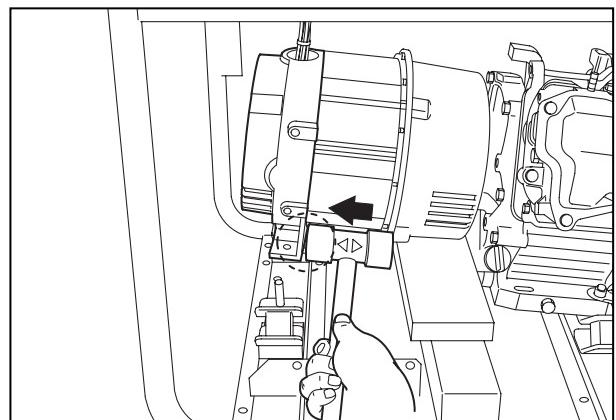
Tool : Box wrench (12 mm)

NOTE: For easy operation, set wooden pieces under the alternator.



- (2) Take off rear cover from stator, by lightly hitting at boss portions with plastic hammer.

Tool : Plastic hammer

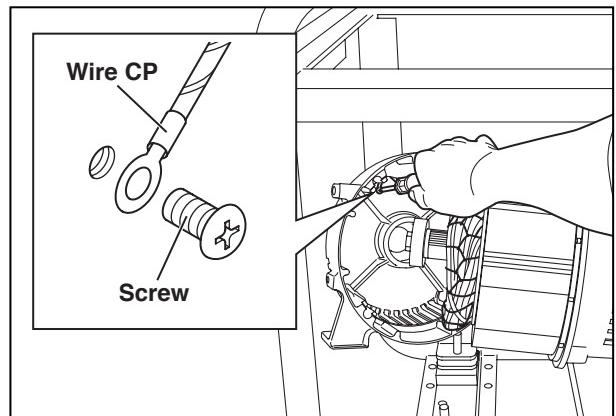


5-2-10 Wire CP

Remove screw and disconnect wire CP from inside rear cover.

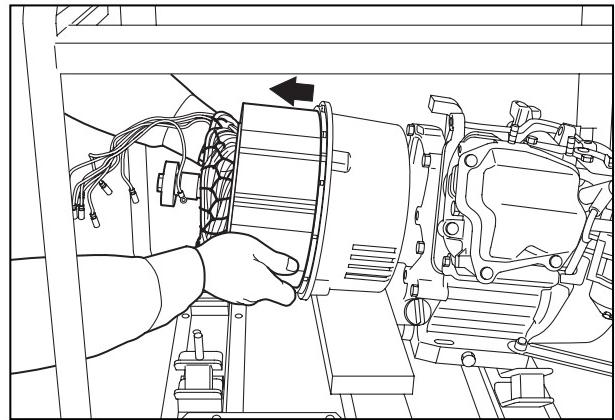
Fastener : M4 -6 mm Screw

Tool : Philips (cross-head) screwdriver



5-2-11 Stator

Take out stator, holding with hands.



5-2-12 Through Bolts

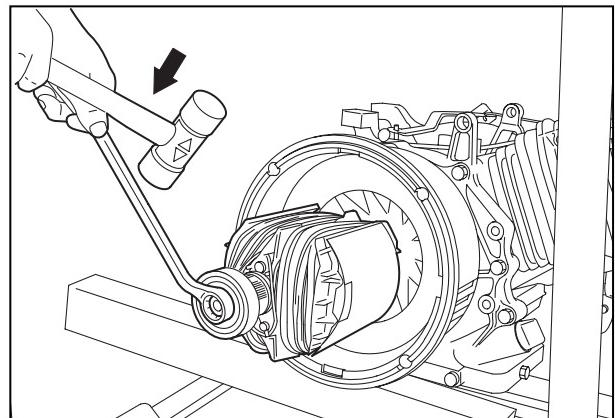
Remove through bolt, by tapping the wrench with plastic hammer.

Fastener : M10x1.5 - 240 mm Through bolt (RGX4800)

M8x1.25 - 260 mm Through bolt (RGX3600)

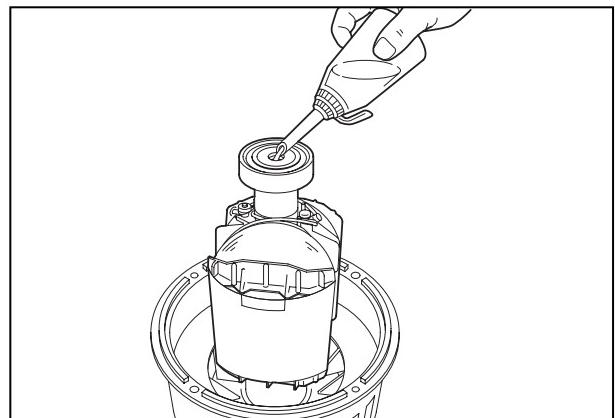
M8x1.25 - 240 mm Through bolt (RGX2900)

Tool : Box-end wrench (14 mm) and Plastic hammer



5-2-13 Rotor

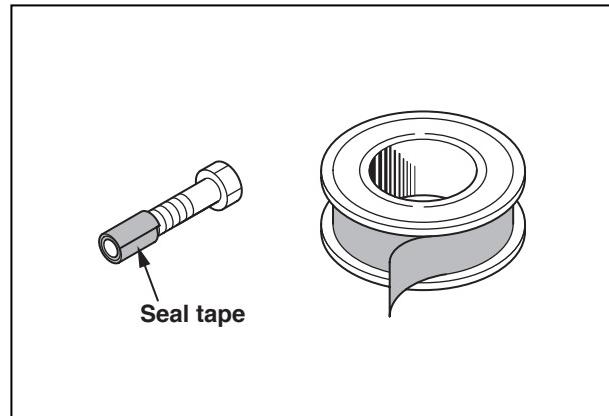
- (1) Set the engine in the condition of recoil starter side downward.



(2) Use engine oil and the bolt with seal tape as a tool for pulling out rotor as follows;

- a. Pour engine oil into the center (through bolt) hole of rotor shaft.
- b. prepare a bolt with the following thread size;

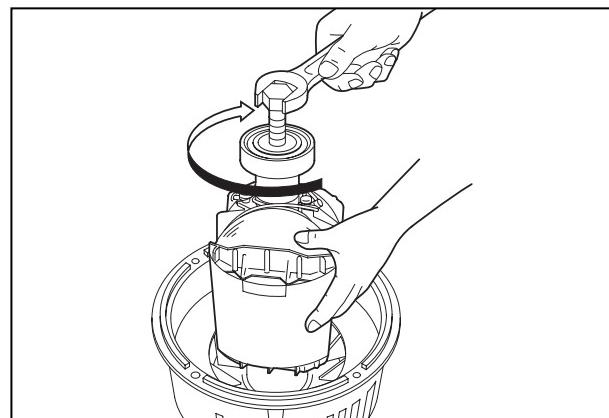
Model	Bolt
RGX4800	M12×1.5
RGX2900 RGX3600	M10×1.5



- c. Apply a few turns of seal tape around the tip of the bolt.
- d. Screw the bolt into the thread of the rotor shaft.
- e. Torque up the bolt by using socket wrench until rotor comes off loose.

NOTE: The hydraulic pressure inside the rotor shaft takes apart the rotor from the engine PTO shaft.

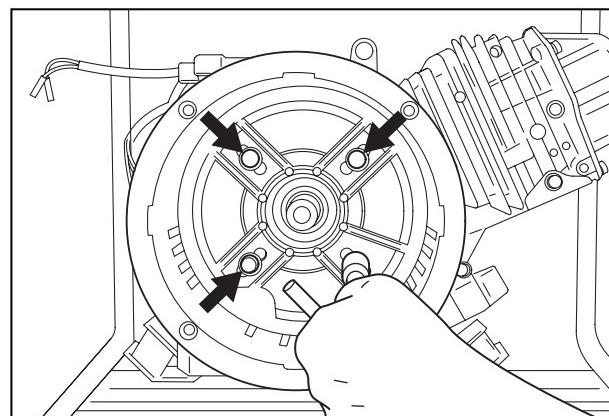
- f. Wipe off engine oil thoroughly from rotor, rotor shaft, engine PTO shaft and front cover.



5-2-14 Front Cover

Remove bolts and washers and take out front cover.

Fastener : M8 - 20 mm Bolt & washers (4 pcs)
Tool : Box-end wrench (12 mm)



5-3 REASSEMBLY PROCEDURES

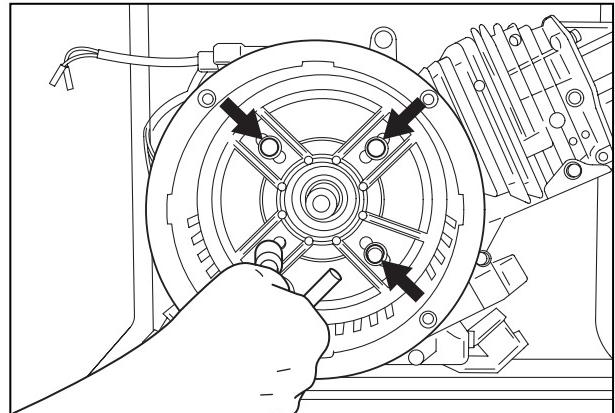
5-3-1 Front Cover

Install front cover onto main bearing cover of the engine in position.

Fastener :

M8 - 20 mm (4 pcs) Bolt with spring washer & washer

**Tightening torque : 11.8-13.7 N · m
(120-140 kgf · cm)
(8.7-10.1 ft · lbs)**



5-3-2 Rotor

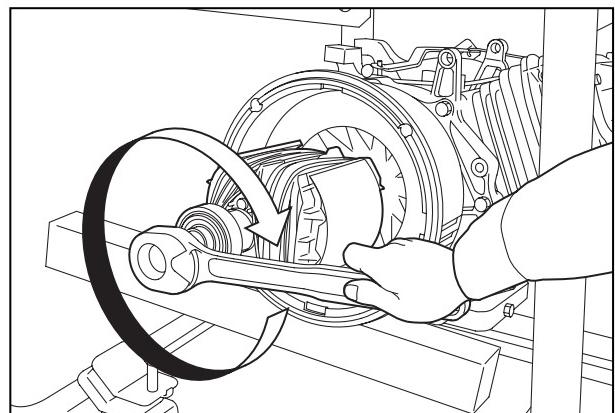
Install rotor onto crankshaft.

Fastener :

M8x1.25 - 240 mm Through bolt with washer (RGX2900)
M8x1.25 - 260 mm Through bolt with washer (RGX3600)
M10x1.5 - 240 mm Through bolt with washer (RGX4800)

RGX2900/3600

**Tightening torque : 11.3-13.2 N · m
(115-135 kgf · cm)
(8.3-9.7 ft · lbs)**



RGX4800

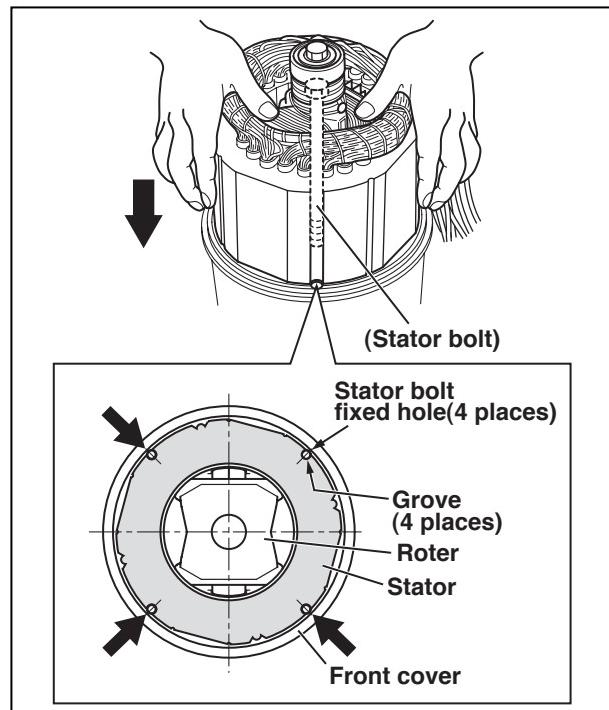
**Tightening torque : 22.5-24.5 N · m
(230-250 kgf · cm)
(16.6-18.1 ft · lbs)**

NOTE: Before installing, clean and wipe off oil and foreign materials from taper portion of crankshaft.

5-3-3 Stator

Install stator into front cover.

Adjust the stator groove position (4 places) so that stator bolt can be tightened later. (RGX4800)

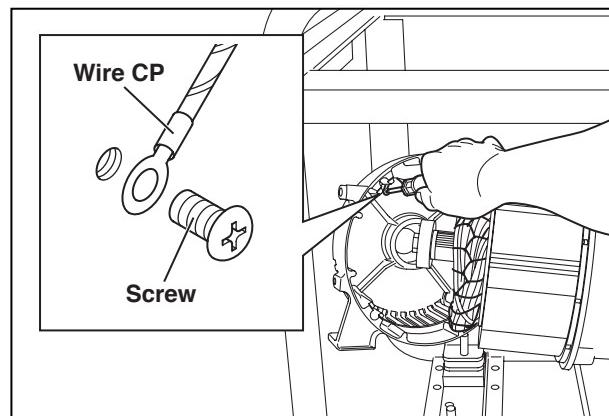


5-3-4 Wire CP

Fix wire CP at inside of rear cover in position.

Fastener : M4 -6 mm Screw

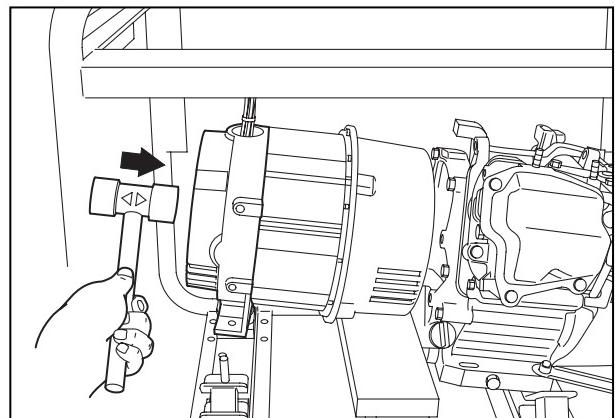
Tool : Philips (cross-head) screwdriver



5-3-5 Rear Cover

- (1) Install rear cover over stator, lightly hitting at the center portion of rear cover with plastic hammer.

Tool : Plastic hammer



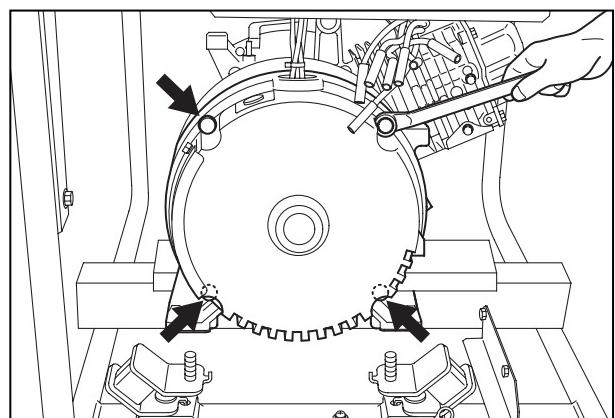
- (2) Tighten stator bolts (RGX4800) or cover bolts (RGX2900/3600).

Fastener : M6 - 150 mm Stator bolts (4 pcs - RGX4800)
M6 - 130 mm Cover bolts (3 pcs - RGX3600)
M6 - 110 mm Cover bolts (3 pcs - RGX2900)

Tool : Box wrench (12 mm)

RGX2900/3600

**Tightening torque : 4.5–5.9 N · m
(50–60 kgf · cm)
(3.6–4.3 ft · lbs)**

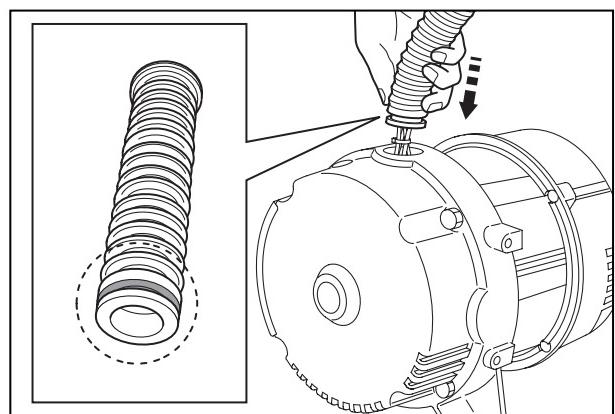


RGX4800

**Tightening torque : 11.8–13.7 N · m
(120–140 kgf · cm)
(8.7–10.1 ft · lbs)**

5-3-6 Bushing

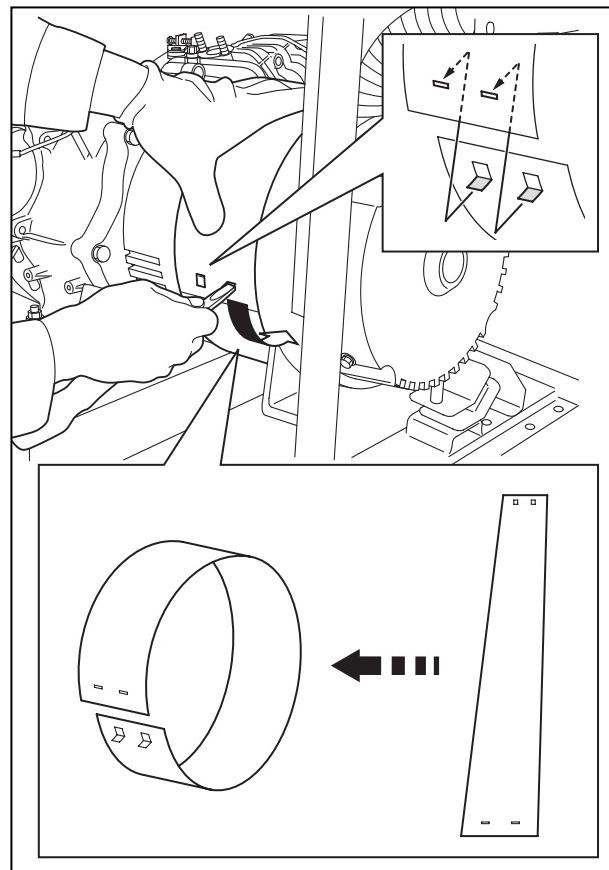
Insert wirings into bushing, and push bush (big groove side) into rear cover hole.



5-3-7 Stator Cover

Set stator cover with the crow inserted into slit and bent (2 pcs).

Tool : Screwdriver



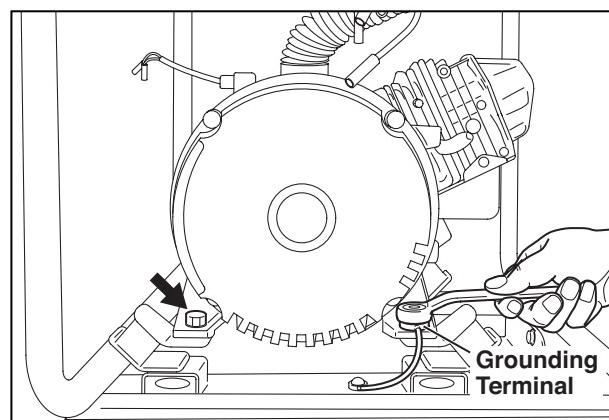
5-3-8 Rear Cover Arm and Grounding Terminal

Fix rear cover arms with mount rubbers, along with grounding terminal.

Fastener : M8 Flange nuts (2 pcs)

Tool : Box wrench (12 mm)

**Tightening torque : 11.8-13.7 N · m
(120-140 kgf · cm)
(8.7-10.1 ft · lbs)**

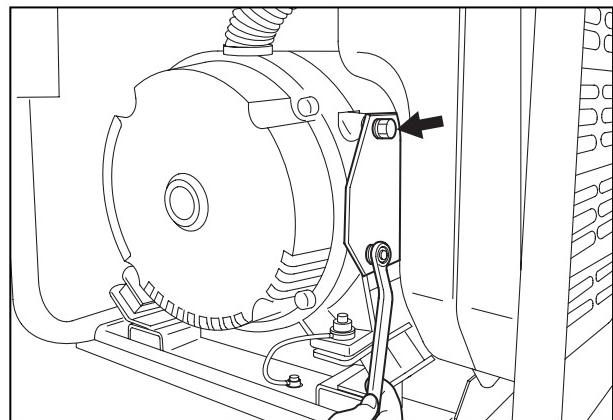


5-3-9 Muffler

(1) Install muffler bracket.

Fastener : M8 - 20 mm Bolt & washers (2 pcs - RGX4800)
M8 Flange nuts (2 pcs)
M8 - 20 mm Bolt & washers (4 pcs - RGX2900/3600)
Tool : Socket wrench (12 mm)

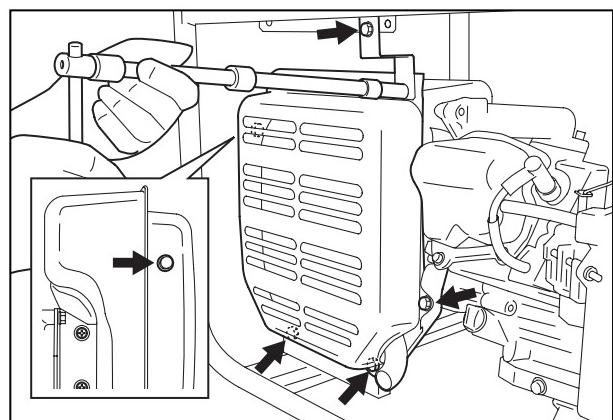
**Tightening torque : 11.8-13.7 N · m
(120-140 kgf · cm)
(8.7-10.1 ft · lbs)**



(2) Install muffler and cover.

Fastener : M8 - 10 mm Flange bolts (6 pcs)
Tool : Box wrench (12 mm)

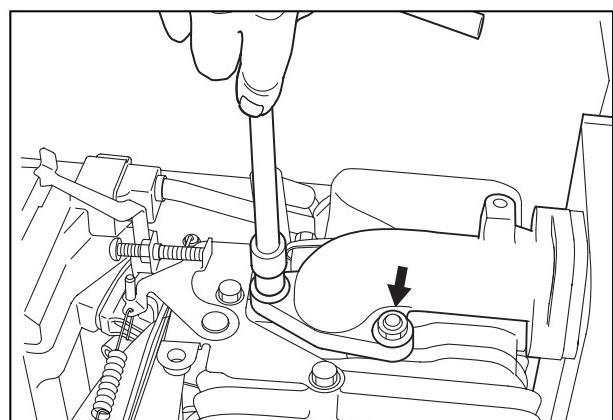
**Tightening torque : 11.8-13.7 N · m
(120-140 kgf · cm)
(8.7-10.1 ft · lbs)**



(3) Install exhaust pipe.

Fastener : M8 Flange nuts (2 pcs)
Tool : Box wrench (12 mm)

**Tightening torque : 11.8-13.7 N · m
(120-140 kgf · cm)
(8.7-10.1 ft · lbs)**

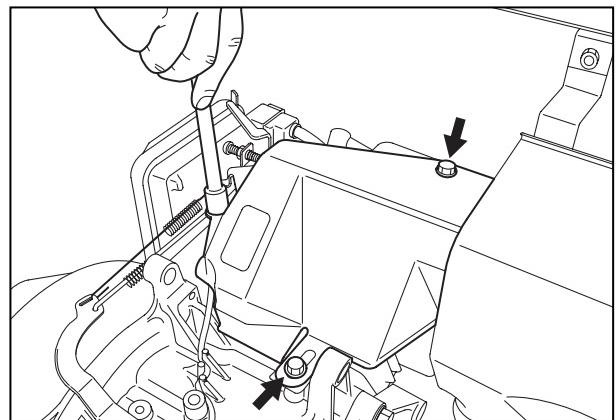


(4) Attach exhaust pipe cover.

Fastener : M6 - 12 mm Flange bolts (3 pcs)

Tool : Box wrench (10 mm)

**Tightening torque : 4.5–5.9 N · m
(50–60 kgf · cm)
(3.6–4.3 ft · lbs)**



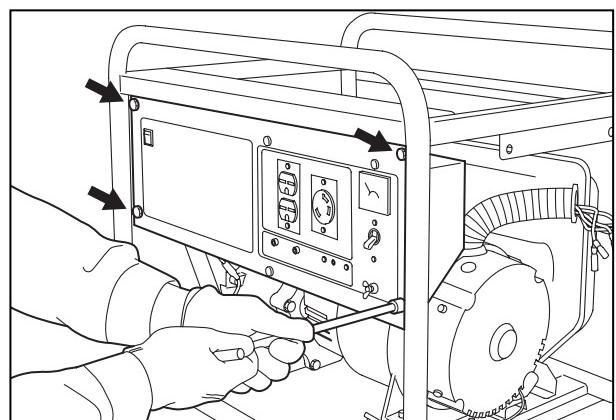
5-3-10 Control Panel

Fix control panel into frame.

Fastener : M6 - 12 mm Screws (4 pcs)

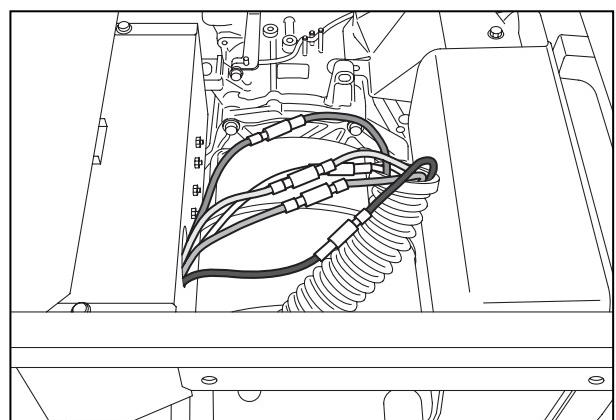
Tool : Box wrench (10 mm)

**Tightening torque : 4.5–5.9 N · m
(50–60 kgf · cm)
(3.6–4.3 ft · lbs)**

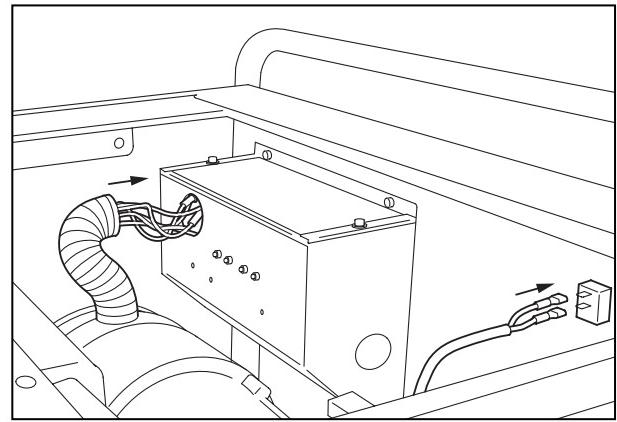


5-3-11 Electric Connectors

(1) Connect all wirings of the same appearance each other between control panel and alternator.

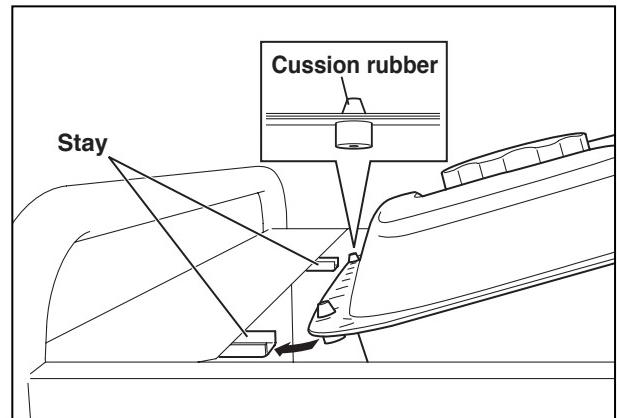


- (2) Push into bushing into the hole on the back side of control panel.
Also connect electric wirings with engine switch terminals. Either wiring can be connected with terminal.



5-3-12 Fuel Tank

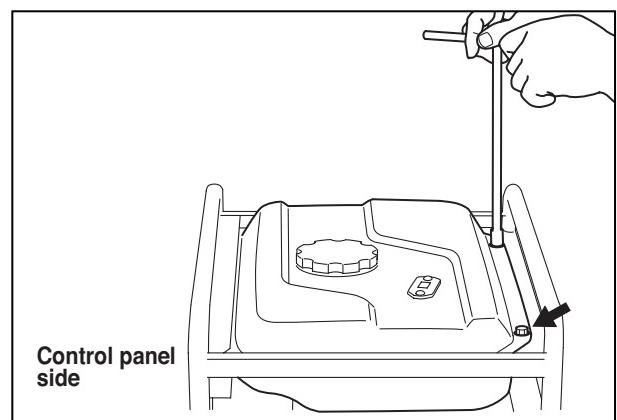
- (1) Set fuel tank with cushion rubber sliding into stay (2 places).



- (2) Fix with bolts.

Fastener : M6 -12 mm Flange reamer bolts (2 pcs)
Tool : Box wrench (10 mm)

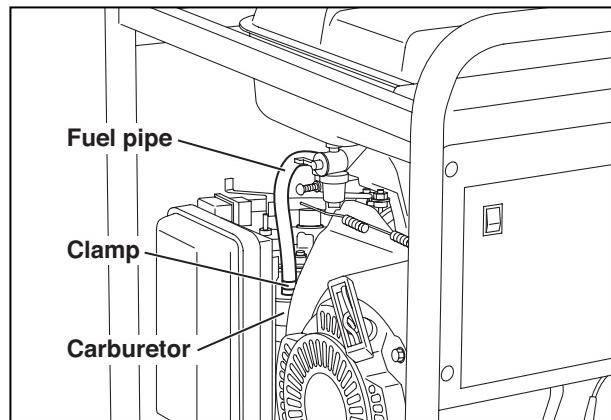
**Tightening torque : 4.5–5.9 N · m
(50–60 kgf · cm)
(3.6–4.3 ft · lbs)**



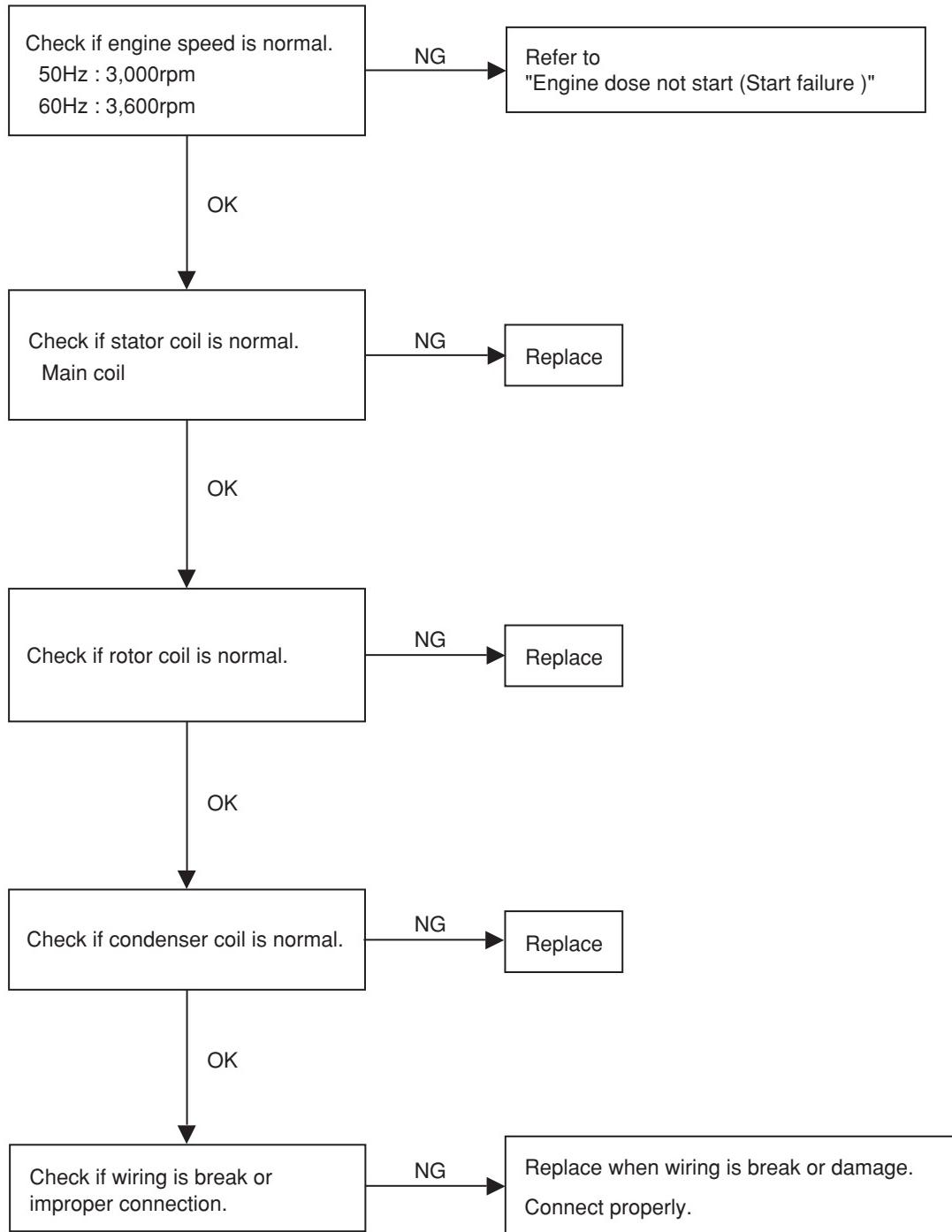
5-3-13 Fuel piping

Connect fuel pipe to carburetor with clamp.

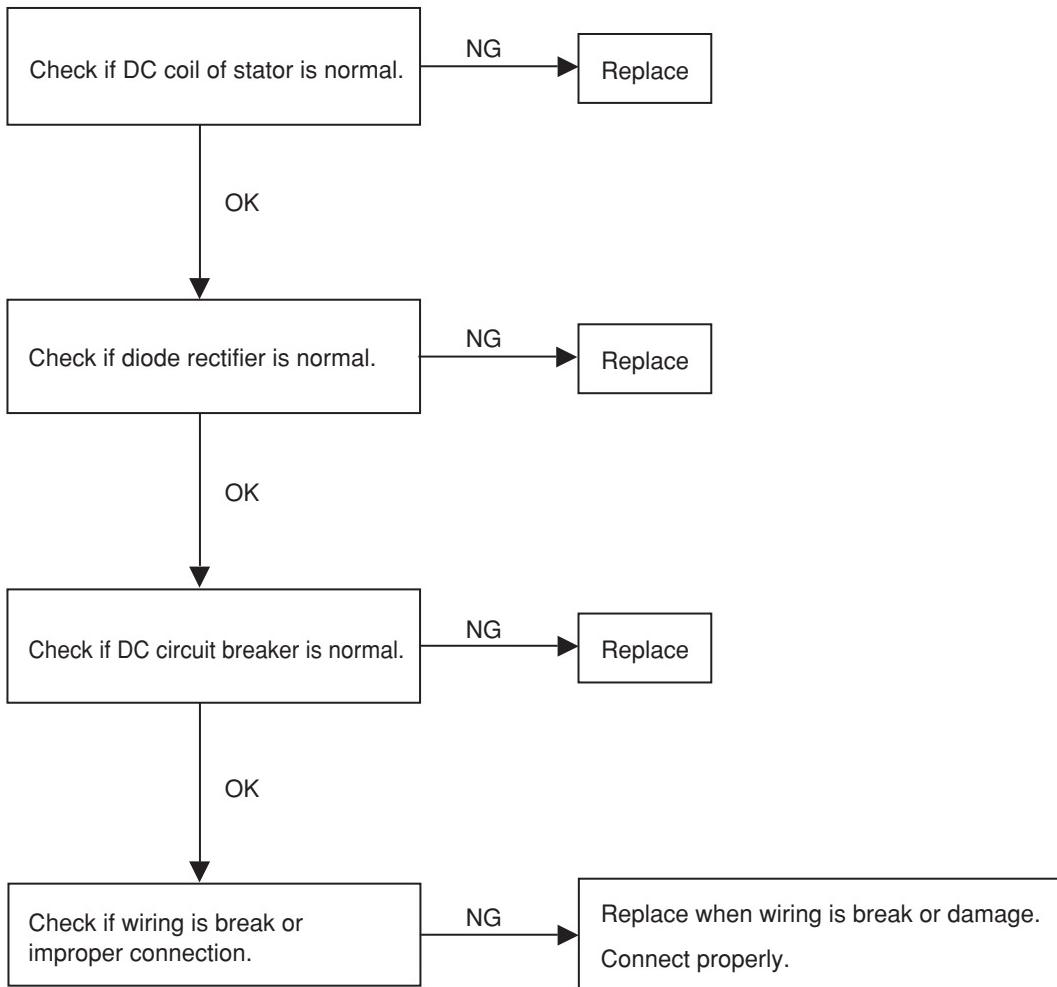
Tool : Pliers



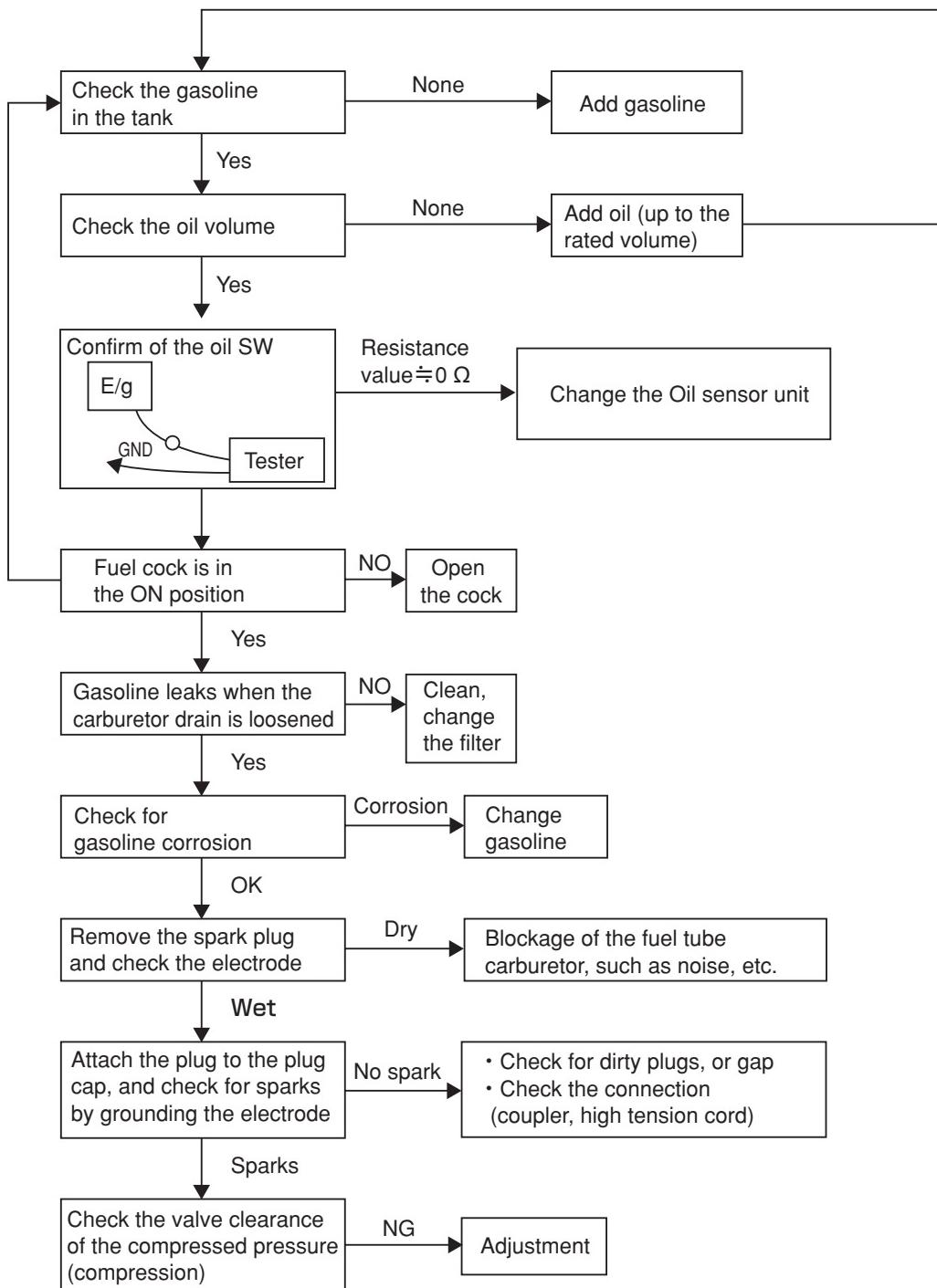
6. TROUBLE SHOOTING



No DC current

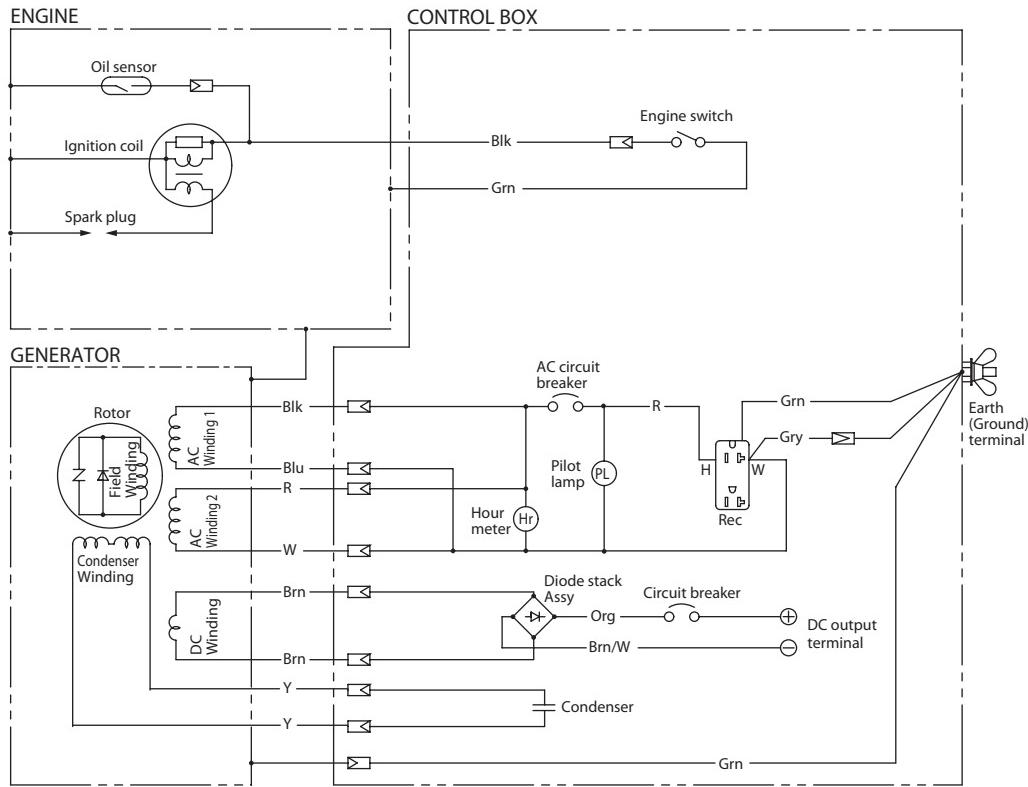


Engine does not start (Start failure)

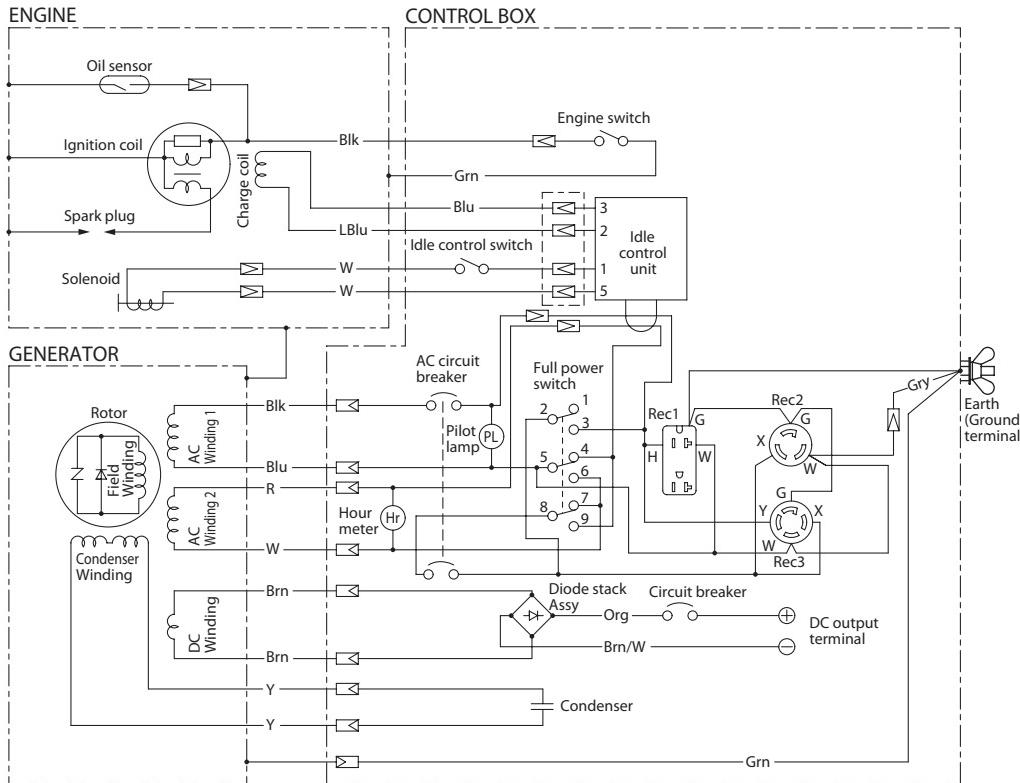


7. WIRING DIAGRAM

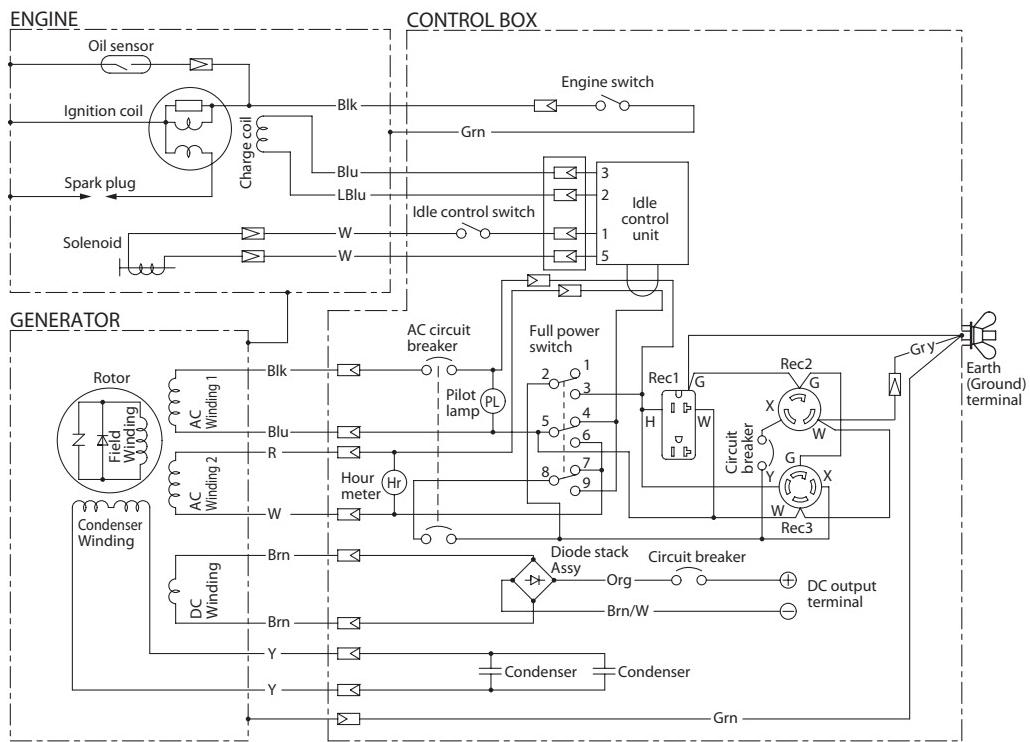
(60Hz-120V) RGX2900 [U.S.A. model]



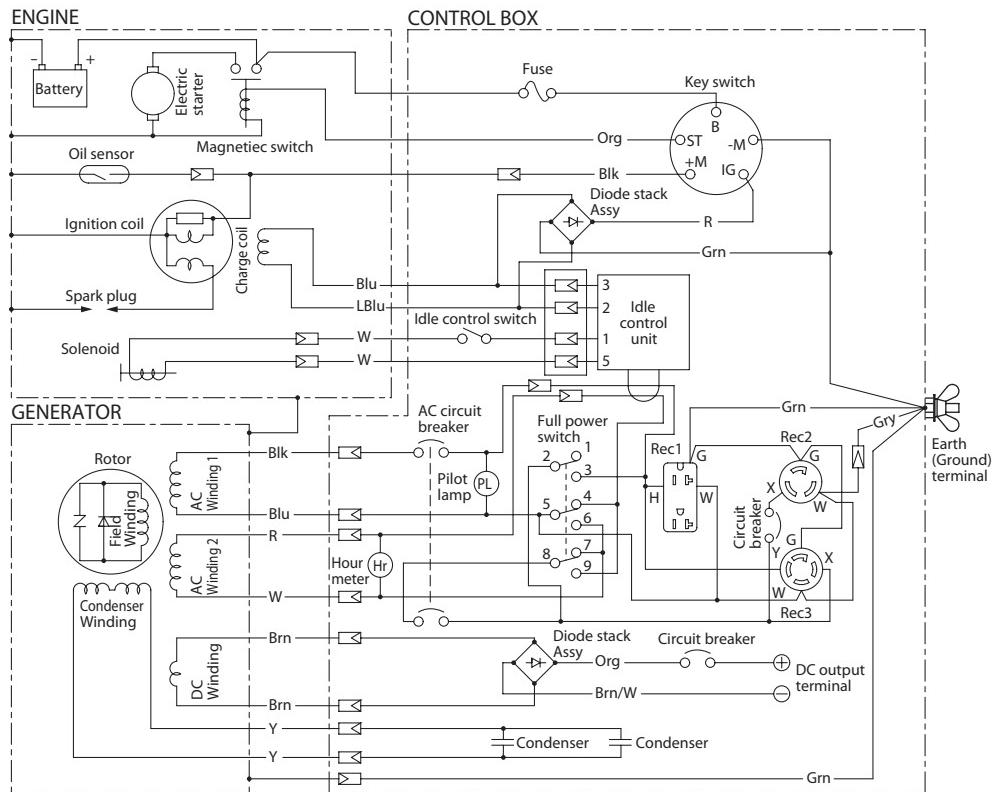
(60Hz-120/240V) RGX3600 [U.S.A. model]



(60Hz-120/240V) RGX4800 [U.S.A. model]



(60Hz-120/240V) RGX4800 w / Starter motor [U.S.A. model]



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